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PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Metastasis of Rheumatism to the Heart.* By ROBERT LAW, M.D., &c. &c.

MARY REILLY, ætat. 19, unmarried, had been confined to bed for a week, with violent pains and swellings of her legs and feet, which came on in consequence of her leaving off warm clothing. Admitted into hospital September 24. Complains much of pains in her knees and feet; her left leg is swollen and tense, and exhibits very much the appearance of phlegmasia dolens; the ordinary febrile symptoms of acute rheumatism are present.

V. S. ad ℥xii.

25th. Pains slightly relieved.

V. S. ad ℥x.

℞ Aquæ Acetat. Ammon. ℥ii.
Aquæ ℥iii.
Liquor Tartari Emetici ʒii.
Tr. Colchici ʒi.
Spiritus Ætheris Nitrosi ℥ss.
m̃ St. ℥i. tertiis horis.

26th. Blood much buffed; pains and swellings have left the extremities; complains of a most acute pain under the left breast, and inability to lie on that side; the hand placed on the region of the heart causes most severe pain; countenance bespeaks great agitation and anxiety; pulse 140, full and soft; respiration hurried; it was now evident that the heart had become affected.

V. S. ad ℥xii.

Emplastrum Vesicatorium regioni Cordis; pediluvium cum seminibus sinapis.

℞ Decocti Hordei ℥vi.
Tartari Emetici gr. iv.
♏ St. ℥i. tertiis horis.

27th. Blood very much buffed; medicine produced vomiting once; complains of being more fatigued than refreshed by her sleep; pulse 140, strong, full, and soft; skin clammy; great distress of countenance.

℞ Aquæ Acetat. Ammon. ℥ii.
Aquæ ℥iii.
Liquor Tartari Emetici ʒii.
Tinctur. Colchici ʒi.
Tinctur. Digitalis gutts. xxx.
Syrupi ℥s.
♏ St. ℥s. tertiis horis.
Repetr. Pediluvium.

28th. Pain quite gone; heart's action very violent; bowels confined.

Infus. Rosæ ℥vi.
Acidi Sulphurici dilut. ʒss.
Sulphat. Magnes. ʒvi.
Tinctur. Digitalis ʒss. ♏.

29th. Pulse 140, full, soft, and regular.

℞ Calomel gr. vi.
Tartar Emetici gr. i.
Opii gr. ii.
Ft. Pilulæ quatuor, sumat unam, tertiis horis.

30th. Sense of suffocation very urgent: respiration extremely hurried, 60 in a minute; heart's action very violent and diffused; on examining the chest posteriorly with the stethoscope, respiration was not to be heard in the inferior half of the left lung; I, in consequence, suspected that this lung was affected with pneumonia.

V. S. ad ℥x.
℞ Decocti Hordei ℥vi.
Tartari Emetici gr. iii.
♏ Ft. ℥i. tertiis horis.

Oct. 1st. Pulse reduced in strength and frequency; breathing very much oppressed; heart's pulsations very violent and diffused; gets no refreshing sleep; is obliged to lie with her head and shoulders very much raised; examination by the stethoscope confirmed the absence of respiration in the inferior half of the left lung posteriorly, and percussion yielded a dull sound there. It now occurred to me, that as these phenomena had not been preceded by the râle crepitant, (the invariable forerunner of hepatization of the lung,) they might depend upon the pressure of fluid contained in the pericardium, gravitating towards this part of the chest, when the patient assumed the sitting posture; to ascertain the fact, I made her lie on her face, and examining her in this position, I found the lung to be perfectly free, and pervious to air to its very base, and, consequently, concluded the entire pathological condition to consist in an extensive effusion into the pericardium.

℞ Calomel gr. iv.
Pulv. Scillæ.
—— Digitalis āā gr. ii.
Ft. Pilulæ quatuor st. unam tertiis horis.
℞ Infusi Juniperi ℥v.
Spirit Juniperi ℥vi.
Acetat. Kali ʒi.
Tinctur. Digitalis ʒss.
Spirit. Ætheris Nitros. ʒii.
♏ St. ℥i. tertiis horis.

Oct. 2nd. Breathing less oppressed; last night was seized with giddiness and fainting; gets no refreshing sleep; face swollen; examination of the heart's action by the stethoscope conveys the sensation of being distant from the surface. For several days there was no appreciable alteration in the symptoms; her principal complaint was want of sleep.

9th. Complains of a stinging pain under the left breast, not increased by a full inspiration; lies constantly on the right side, cannot lie on the left on account of the pain, nor on her back, from the immediate sense of suffocation which ensues; pulse 140, soft and regular.

Vesicatorium regioni cordis. Repetr. medicamenta diuretica, habeat haustum anodynum horâ somni.

10th. Slept well, but had vertigo and faintings in the evening; legs much swelled; countenance much less anxious; urine considerably increased. From this period her condition improved, though the heart's action continued very violent, she did not feel much inconvenience from it; complains much of cold feet; has excessive thirst, and very little appetite.

Oct. 26th. Respiration not much hurried; pulsation of the heart less diffused, and more distinct; she can now lie on the left side without the slightest pain; pulse 120; swelling of the legs much diminished; strength increased.

℞ Elaterii gr. ii.
Bitartratis Potassæ ʒi.
Tartratis Ferri ϑi.
Therica. q. s.
Fiat Electuarium sumat cochlear minimum 4tis horis.

This medicine produced a violent action on the bowels, and weakened her more than I had anticipated; however, she soon recovered its effects; the distress in breathing was considerably relieved, indeed she only felt it when she lay upon her back; she suffers no inconvenience from the action of the heart, which is both violent and diffused; her appetite is much improved; her

sleep refreshing, and not disturbed by disagreeable dreams; she has quite lost her anxious expression of countenance; her legs, though swelled, are not painful. In a few days she was so much better, as to be able to leave the hospital. I saw her a month after, when the dropsical swellings had entirely subsided; she only complained of excessive night perspirations, which weakened her very much; these quickly yielded to sponging with vinegar and water; pulse still 100; heart's action more diffused than natural; she can lie in every position, though not very long upon her back.

The preceding case presents us with many points of interest, exhibiting very unequivocally acute pericarditis, terminating in effusion into the pericardium. The symptoms of this disease are in general so disguised by the complications to which it is subject, that to ascertain its existence is justly regarded as one of the most difficult points of medical diagnosis; in this case the pain under the left breast not much aggravated by a deep inspiration, and coming on under circumstances more favourable to the development of pericarditis, sufficiently distinguished it from pleuritis; but the absence of respiration in the situation of the base of the left lung posteriorly, I own, embarrassed me not a little, naturally leading me to suspect the not unfrequent complication of pneumonia, the symptoms of which, though they are in general unequivocal enough, are sometimes so obscure as to have obtained for this disease the designation of latent pneumonia. Not altogether satisfied with my diagnosis, the expedient of examining the patient lying on her face suggested itself to me, as a mode to ascertain whether the absence of respiration was permanent and due to an actual change in the lung itself, rendering it impervious to the air; or was the consequence of displacement of the lung, which might result either from fluid effused into the cavity of the pleura, or into the pericardium; the return of respiration on the change of position disproved the existence of pneumonia, and left us to decide between effusion into the pleura and pericardium, which

the absence of the symptoms that usually announce pleuritis, and of egophony, the stethoscopic evidence of effusion into the chest, added to the positive symptoms of the affection of the heart soon determined. Having thus ascertained the precise pathological condition of our patient to consist in hydrops pericardii, we had recourse to the employment of diuretic medicines which made a speedy impression upon the disease; and, finally, effected a complete cure.

I had constant opportunities of seeing this person for a year after she had been in hospital, and the only trace of her complaint that she retained, was an habitually quick pulse, which was generally 100. I have often observed this quickness of pulse to survive all the other symptoms of disease, and sometimes to become permanent, especially if from the nature of the disease there be any impediment to the circulation, whether near or remote from the heart, and though this impediment be temporary, for during its continuance the heart is stimulated to increased action, which being kept up for any considerable time, ultimately produces hypertrophy of the organ, and a proportionally augmented power of propelling the blood; but under ordinary circumstances there is a physiological relation between the power of the heart and the capacity of the aorta, and though the elasticity of the artery will admit of its accommodating itself to a temporary increased action of the heart; still this elasticity having its limits, will not be sufficient to meet the permanently increased action dependant upon hypertrophy of the organ; from this interrupted relation we shall have the same phenomena as result from a congenital disproportion between the heart and aorta, which Laennec observed to be a fertile source of hypertrophy of the heart, and consequent derangement of the circulation.

ART. II.—*Practical Remarks on Delirium Tremens.* By CHARLES LENDRICK, M.D., T.C.D., Fellow of the College of Physicians, and Physician to Mercer's Hospital, Dublin.

THE ensuing observations probably present little of novelty. This I do not consider of importance if they should prove to be practically correct and confirmatory of sound views of the disease, one which is very prevalent in Dublin, and by no means confined to the lower ranks, or the male sex. I have seen some cases in private practice, and a great number during my Hospital experience of the last six years. It is not an unfrequent attendant on wounds, fractures, and other casualties, and usually appears during the necessary antiplogistic treatment which presents so strong a contrast to the patient's previous intemperate habits. I have seen a patient after a surgical operation, or suffering from the effects of an injury, in whom the symptoms of constitutional irritation were at once subdued, and the suppuration rendered healthy by an allowance of his usual stimulus. This is a fact that ought always to be borne in mind in treating the disease of the habitual drunkard, and yet it is one which I am convinced has led to much abuse in practice, by causing us to reason from the exception instead of the general rule.

The attention of all physicians practically conversant with delirium tremens has been drawn to its division into two species, which are now technically denominated the *asthenic* and the *sthenic*. Little difficulty can arise as to the diagnosis of the former. The long duration of previous intemperate habits, the odorous perspiration, and the characteristic tremor of the hands, at once denote nervous irritation distinct from the effects of inflammation. In the treatment our object is to procure sleep, from the occurrence of which we may date the removal of the paroxysm. For this purpose, the acetate of morphine will be found decidedly the best opiate; as it may be exhibited in divided doses till the desired effect is produced, with-

out, encounteriug either the risk attendant on an overdose, or the restlessness and irritation consequent on the exhibition of other preparations of opium in insufficient quantity.

Even, however, in this form of the disease, mischief is frequently done by the copious administration of spirituous liquors; a practice tending to produce, amongst other obvious evils, the recurrence of the paroxysms. In some cases it certainly may be unavoidable, but in general good sound porter, or (amongst the better ranks) mulled wine, will afford a safer mode of letting down the unnaturally reactive state of the system. Where it is disposed to sink, and the constitution has been broken by excessive dram-drinking, burned brandy may be allowed, but in no greater quantity than the urgency of the circumstances imperatively demands.

What is called the *sthenic* form of delirium tremens, I consider to be merely a combination of the ordinary disease, with inflammation of the membranes of the brain. It is to be recollected that intoxication has long since ranked amongst the existing causes of *phrenitis*, and we are not warranted in altering our views and adopting a treatment contrary to what is practised in other cases, merely because the disease has originated in excessive drinking, which, under peculiar circumstances, may produce one of a different kind. It is only in proportion as the paroxysms have become frequent, or the patient's constitution impaired, that the exception exists to the general rule, and that the lancet should be withheld. It is in such mixed cases that the use of tartarised antimony, as recommended by M. Barkhausen, is so much to be prized, combined with the application of the tepid, or even the cold shower-bath. But while we thus dispense with bloodletting on one hand, we ought, on the other, to be cautious in the use of opium and stimulants. If we expect, as in genuine delirium tremens, to overcome the disease by producing sleep, we shall find ourselves disappointed in the result, and that we have sacrificed too much in order to obtain it. Opium should be administered with caution, and

rather with a view to tranquillize than to procure sleep, an object which comparatively small doses are calculated to attain; and the other stimulants should be withheld till the stage of exhaustion consequent on the excitement.

As the disease may present every possible variety between the two extremes of delirium tremens and phrenitis, it is impracticable to lay down a general rule as to treatment. The more the characteristic symptoms of odorous perspiration and tremor of the hands are developed, the more numerous the preceding paroxysms, and the more broken the constitution of the patient, the greater reason there is to suppose that the mixed form verges to the elementary component of delirium tremens, and *vice versa* with respect to phrenitis.

When the disease is attended by the urgent symptoms of phrenitis, it is often a point of great nicety to determine as to the propriety of bloodletting; a measure as obviously injurious in one extreme form, as it is indispensable in order to prevent effusion on the brain, in the other. If after due consideration we are really in doubt as to the expediency of arteriotomy, (for to this method of detracting blood I have confined my practice in such cases,) there are two courses which may be pursued. The first is, as in fever of the type of Synochus, to treat the disease altogether antiphlogistically in the commencement, and to support the patient by stimulants in the stage of exhaustion. The second, to use purgatives, tartarized antimony, the shower-bath, and *moderate* doses of opium, and to watch the result, having recourse to the lancet only on the continuance of phrenitic symptoms. I conceive the latter to be the better mode of practice; on the supposition, however, that the case is really obscure, and the symptoms of phrenitis not altogether predominant.

A strong muscular man, a butcher, between 25 and 30 years of age, was admitted into Mercer's Hospital, under my care, in November last. He had been for some years much addicted to drinking, and after an excessive use of whiskey during the

preceding week, was seized with some kind of convulsive fit, followed by mania, which continued for three days, on one of which he attempted to commit suicide. He was so violent on admission that the strait waistcoat was applied, and he was strapped down to the bed; a proceeding which I always adopt unwillingly, being convinced that in maniacal cases recovery is much expedited, by using as little restraint as is at all consistent with the safety of the patient and his attendants. He was freely purged by means of calomel and terebinthinate enemata, and the acetum opii was exhibited in divided doses, till sleep was procured; an occurrence from which I anticipated recovery, as both the habits of the patient, and his appearance, induced me to believe that the case partook principally of the character of delirium tremens.

On the following morning, however, I found him more violent than ever—biting, blaspheming, and threatening destruction to every one that approached him. As the pulsation of the temporal artery was strong, it was immediately opened, and sixteen ounces of blood detracted with ease, in a full stream. He now became more quiet and rational, and submitted to have his head shaved, and a camphorated lotion applied. The free state of the bowels was still kept up by the administration of pills containing croton oil, and at his own request he was permitted to smoke a pipe. The next day he was so rational that all restraint was removed. He was then allowed a moderate quantity of porter and beef tea, and within a week from his admission, he was dismissed from the hospital, quite well, and grateful* for the services that had been rendered him.

I think there can be little doubt that this was a case of the mixed form, which I have described. I confess my prejudice against the lancet was so strong that I had recourse to it with

* In any form of maniacal disease we should be very cautious in trusting to the sanity of a patient, however apparently rational, so long as he shews resentment, or even dissatisfaction, at the restraint to which he has been subjected.

much hesitation, such as most practitioners will feel who guide their treatment too much by the *name* of a disease.

I have long since inculcated on the pupils attending my lectures the great discordance between disease as described in nosological works, and as witnessed at the bed-side. We here see instances not resembling any of those cases which are so systematically arranged and discriminated; but, perhaps, a mixed form, partaking of two or more of the elements described, and receiving its name from whichever of them it resembles in the greater number of the symptoms.

ART. III.—*A new Method of graduating Glass Beads, for the Purpose of ascertaining the specific Gravities of Fluids.* By WILLIAM FERGUSON, Operative Chemist to Apothecaries' Hall.

THREE methods are in general use among chemists for ascertaining the specific gravities of fluids; the bottle, with which they compare the weights of equal volumes, the hydrometer, with which they compare the volumes of equal weights, and the bead, with which they directly compare the specific gravities of the instrument and fluid, the relation the former bears to that of water being known. The bead possesses advantages over both the bottle and hydrometer in the delicacy of its indications, and extent of its application; in some important experiments it is the only instrument available.

Beads for this purpose are usually graduated by ascertaining the specific gravity of that fluid in which a bead has no tendency to rise or sink, but will remain at rest in any part in which it may be placed; for this purpose many solutions are required; as they are liable to change their specific gravities from slight changes in temperature, and from evaporation, a

method of graduating beads with the help of distilled water only, may be found useful.

Having procured a sufficient number, weigh them accurately, noting the weight of each, then weigh them in distilled water at 62°, observing the loss of weight which every bead sustains, their weights divided by the loss of weight in water will give their specific gravities; and such as require alteration should then be arranged for the specific gravities to which they can be most conveniently reduced, and marked with them, before they are finally adjusted.

If we could reduce the weight of a bead without altering its bulk, its specific gravity would be reduced directly as the weight subtracted; but we have no method of altering the weight without changing the bulk also, and the loss of bulk is to the loss of weight as unity to the specific gravity of the glass. Having found, therefore, the specific gravity of the glass, the weight of the bead also, and its bulk, we can calculate the number of grains that must be ground off to reduce it to any required specific gravity.

Let W represent the weight of a bead, B its bulk, equal to the loss of weight in water, G the specific gravity of glass, R the required specific gravity, x the weight to be ground off, and y the bulk corresponding to that weight, we have then the following equations:

$$\frac{W-x}{B-y}=R, \text{ and } \frac{x}{y}=G,$$

which gives

$$W-x=BR-yR, \text{ and } y=\frac{x}{G},$$

By substitution

$$W-x=BR-\frac{Rx}{G},$$

By multiplying out the fraction we have

$$GW-Gx=GBR-Rx,$$

By transposing

$$\overline{G-R}\,.\,x=G(W-BR),$$

and by division

$$x=G.\frac{W-BR}{G-R}.$$

The rule is therefore as follows; multiply the bulk of the bead by the intended specific gravity, and subtract the product from the weight of the bead, divide the remainder by the difference between the specific gravity of glass and the intended specific gravity, the quotient is the bulk to be ground off, and when multiplied by the specific gravity of glass, is equal to the weight that the bead must lose. Let the quantity thus found be subtracted from the original weight of the bead, the remainder is the diminished weight which should be placed in the pan of the balance, and the bead ground down till it corresponds with it.

The calculation may frequently be considerably shortened by using a table of logarithms, as follows; multiply the bulk of the bead expressed in grains and decimals by the intended specific gravity and deduct the product from its weight, to the logarithm of the remainder add the complement of logarithm of the difference between the specific gravity of glass and the required specific gravity, and the logarithm of the specific gravity of glass itself, the sum will be the logarithm of the weight of glass which it is necessary to grind off.

By this method we can graduate beads with great accuracy, and the calculation may be verified before the bead is altered, for as the quotient obtained by dividing $W-BR$ by $G-R$ is y, the bulk corresponding to the intended reduction in weight, it may be subtracted from B, and the remainder divided into the reduced weight of the bead $(W-X)$, if the calculation has been correct, the quotient will be the required specific gravity; should it differ from it only by a low decimal place, it can, of course, make no sensible error in practice; and the actual accuracy of the bead is a matter of strict arithmetical

calculation, as far as the delicacy of the balance employed will permit. From the difference of the specific gravities of glass it may be well to procure a fragment of the tube of which the beads were made, to ascertain it exactly.

Suppose a bead that displaces 20 grains of distilled water at 62°, weighs 25 grains; the loss of what weight will reduce it to the specific gravity of water, that of glass being 3.5?

$$x = G.\frac{W-BR}{G-R}$$

$W=25$ $B=20$ $R=1$ $G=3.5$ to find the value of x,

$25-20\times 1=5$

$5\div 3.5-1=2$

$2\times 3.5 = 7$ the required reduction in weight.

By the use of a table of logarithm

$25-20\times 1=5$ logarithm		= 0.698970
$3.5-1$ =	2.5 comp. logarithm	= 9.602060
	3.5 logarithm	= 0.544068
	7 logarithm	= 0.845098

It is evident that $25(W)-7(x)=20(B)-2(y)$.

ART. IV.—*Observations on the Treatment of Various Diseases.* By ROBERT J. GRAVES, M.D., M.R.I.A., King's Professor of the Institutes of Medicine.

(*Continued from* vol. i. p. 304.)

CONVULSIONS IN CASES OF CHRONIC DROPSY.

CONVULSIONS in hydrocephalus have long attracted the attention of the profession. Those I am about to describe appear to possess features of a very different character. I have now witnessed three cases where they have suddenly and unex-

pectedly supervened. The first was that of a gentleman about sixty years of age, healthy, but slender, and extremely temperate in his habits; without any apparent cause, he became gradually anasarcous; the œdema commenced in his feet, and after some weeks extended to the integuments of the abdomen. He had some cough and copious expectoration at the period of this attack; his strength now visibly declined, and his urine became scanty, but there was no fever. This state had continued for a month, and he did not seem to improve under the use of mild diuretic remedies, when he was attacked in the middle of the night with very severe convulsions, attended with unconsciousness, and turgescence of the face, and many symptoms resembling an attack of epilepsy. When the fit subsided his skin was found to be hot, his pulse quick, and he complained of headach and great restlessness and jactitation. Purgative medicines were exhibited, cooling lotions applied to the head, and a copious flow of blood obtained from the arms by means of leeches. For three days he had many returns of the fits, with various degrees of severity. They at length ceased, the fever gradually subsided, the secretion of urine was augmented, and the dropsical swellings rapidly disappeared. His convalescence was complete, and his health has since been unimpaired. Mr. Barker, of Great Britain-street, witnessed the progress of this case.

The next case was that of a young gentleman, aged about seventeen, who had been several months affected with anasarca and ascites, and whom I was requested to visit by Mr. Young, of Chatham-street. There was not the slightest vascular excitement, nor could we detect any organic disease, either in the chest or abdomen, with the exception of some occasional tenderness and tympanitis in the region of the stomach. His urine contained a very large proportion of albumen. I need not detail the remedies which we employed, suffice it to say that *cold affusion, acupuncturation,* and a *meat diet,* were all successively tried, and failed to remove the swellings. His general

health did not appear to suffer much, and his appetite continued good. The disease had continued nearly six months, when he was unexpectedly seized with somnolence ending in a most violent fit of convulsions, closely resembling an epileptic seizure. This fit lasted for nearly half an hour with more or less violence, and was accompanied by quick pulse, and well marked symptoms of fever, together with determination of blood to the head. During the two following days he had many returns of the convulsions, and at times he lay in a stupid and almost insensible state; but these cerebral symptoms then subsided, and left no trace behind. The fever, however, continued, and our patient was next attacked with symptoms of violent abdominal inflammation, which also yielded, but was soon succeeded by effusion of serous fluid into both pleural cavities. This effusion took place with great rapidity, and in the course of twenty-four hours our patient died asphyxiated.

The next case I shall give in the words of Mr. Dwyer, who witnessed its progress. I did not see it myself, but Mr. Dwyer's statment may be relied upon as accurate.

—— Moran, a labourer, æt. forty, of robust habit, laboured under anasarca and ascites, with supposed enlargement of the liver. His sufferings, when I first saw him, were aggravated by some dyspnœa. After purgative and diuretic medicines had been persevered in for some time without relief, he was removed to hospital, whence, after being put three times under the influence of mercury, he was dismissed. Shortly after he relapsed, in consequence of exposure to wet and cold, when I was again asked to visit him, and found that all the symptoms had returned with greater violence than before; fearing more mercury, he refused to return to hospital, and consequently I myself attended him at his own room. I administered various hydragogue cathartics and diuretics, and during the following month, I, more than once, succeeded in producing a very evident diminution of the dropsical swellings. The improvement, however, never lasted long, and I had begun to consider the

case as hopeless, when I was summoned to visit him in great haste, and found him in a fit. He was lying on his back, his face somewhat congested, and the pupils dilated; the pulse very slow and soft; breathing stertorous. His friends said that he had not had any convulsions during the seizure. As the fit had come on suddenly, I considered that it was a case of serous apoplexy, arising from rapid effusion into the ventricles of the brain, and consequently I regarded a fatal termination as almost inevitable. Turpentine injections were administered, and blisters were applied to his scalp. On the following day, I was agreeably surprised at finding that he had recovered his consciousness, although he could not speak. In a few days his speech gradually returned, and he was in nearly the same state as before the fit. A fortnight afterwards, he was again seized in nearly the same way, except that he had now some convulsive motions of the muscles of the face and extremities, and the paroxysm was more severe. I now considered the case as perfectly hopeless, never expecting him to recover from the state of insensibility in which I found him. The same means of relief were, nevertheless, applied, and were succeeded by a similar amendment. The coma abated, his pulse became quicker, and in the course of two days he was restored to his former state, in every thing, except the loss of speech, which continued, and a diminution of muscular power, almost amounting to paralysis of the right side. He remained without any material alteration in the symptoms for some time, occasionally relapsing into insensibility, and again recovering, so as to recognize his wife. In the mean time his speech improved, and the paralysis of the right side apparently diminished, a change which could not be attributed to medicine, for he had long since refused to take any. The blister that had, in the first attack, been applied to the scalp and nape of the neck, had produced a suppuration, which I ordered them to keep up by means of proper applications, and I took my leave, weary of an attendance where both the patient and his friends seemed to have lost all confidence in the resources of medicine. I left, how-

ever, some diuretic pills and a diuretic mixture, in his room, and directed his wife to inform me if any thing particular occurred. I did not hear from them for a week, when, being anxious to ascertain how the case had terminated, I paid a visit, firmly convinced that I should hear of his death, when, what was my astonishment to see him jump off a stool, place himself, arms a-kimbo, before me, and to my timid inquiry—"what news?" answer, "I am as stout a man now as you." I very naturally concluded that insanity had suddenly been substituted for dropsy; but I soon found that he was perfectly in his senses. He told me that he had taken my pills and mixture in double doses, and that a most profuse diuresis had supervened, rapidly followed by subsidence of the dropsy. He now complained of nothing but weakness, and eventually recovered perfectly, and has continued, for the last year and a half, his occupation as a carter.

The fourth case of this affection I have already related in the second number of this Journal. It was relieved by *cold affusion*,* and the patient perfectly recovered.

I am not aware that this sudden and unexpected occurrence of violent cerebral disease has been noticed by authors on dropsy. They remark, indeed, that sometimes an attack of apoplexy suddenly carries off the patient, and they attribute, probably with justice, such an event to a sudden effusion of

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* Since I wrote the account of this case I find in Ritchter's *Specielle Therapie*, that that excellent practical physician, Dr. Heim, of Berlin, had used the application of a small stream of ice-cold water to the head, with great success, both in the convulsions and coma of hydrocephalus. This application is persevered in as long as the insensibility or fits continue, and it is re-applied whenever they return. Cases, apparently hopeless, have been thus restored to health. He observes that this treatment requires great perseverance and attention, for the child must be held by an assistant whenever the cold water is applied, and its neck and shoulders must be protected by means of an oiled-silk covering, as the application of the cold must be strictly limited to the head, while the warmth of the rest of the body is carefully kept up.

serum into the ventricles of the brain. An occurrence of this nature I witnessed ten years ago in the old Meath Hospital. The cases I have related appear to me to depend upon a different cause, viz. a determination of blood to the head. In Mr. Dwyer's patient, the congestion evidently terminated in effusion of blood, causing paralysis of the opposite side of the body.

This occurrence, and the frequent return of the fits, prove that the disease did not depend upon mere effusion of serum. In the cases I myself saw, the cerebral symptoms certainly arose from determination of blood to the head, and they were accompanied by febrile symptoms and an excited state of the general circulation.

The happy termination of three such cases out of four, shews that the occurrence of convulsions, coma, and loss of speech, are by no means so fatal as has been supposed* in chronic dropsy. When such a state of things supervenes, it would almost appear, that if the patient be treated properly, his chances of recovery from the dropsy are rather increased than diminished. It is singular that the cerebral symptoms should have entirely disappeared in all the four cases, a fact which forms a striking contrast with the invariable fatality of convulsions when they supervene in jaundice.

TINCTURE OF CANTHARIDES IN HOOPING COUGH.

The treatment of hooping cough is of vast importance, as the disease, particularly in young and delicate children, frequently proves either directly fatal, or else lays the foundation of other equally unmanageable forms of pulmonary complaints. The observations of Doctor Mackintosh† upon the symptoms,

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* Tödtliche Zieehen in der Wassersucht sind Schlafsucht und Aphonie. says Richter.

† Elements of Pathology and Practice of Physic, vol. i. p. 400.

pathology, and treatment of this disease are excellent, and ought to be attentively perused by every practitioner. It appears to me, however, that he has omitted to mention one of the most valuable remedies, Tincture of Cantharides.

I quite agree with Doctor Mackintosh in the treatment he proposes for the first or catarrhal stage of the disease; the antiphlogistic regimen and treatment, leeches to the larynx, in some cases even general bloodletting, antimonials, and ipecacuanha in nauseating doses, are the remedies which the first stages of hooping cough almost invariably require; after the second or third week, and in some cases even after the first, the well marked symptoms of constitutional fever, and local inflammation, generally subside, while the violence of the cough, and the peculiar sound of the hoop, are far from being alleviated. It is at this period that the true nature of the disease is most evident, it is now that it too frequently becomes an *opprobium* to the medical attendant. The patient's friends complain that no remedy can be found to allay the cough and abate the peculiar sense of suffering which accompanies the paroxysms of hooping, and they think it very singular, that while the health in all other respects seems unimpaired, the original disease goes on unmitigated. Hence it is that they seek for and not unfrequently apply empirical remedies. Many authors have mentioned the Tincture of Cantharides, as a medicine which has occasionally proved useful in hooping cough. Most practitioners, however, are prejudiced against its employment, and prefer remedies which are not so likely to excite anxiety in the mind of the physician, during the period of their exhibition. Such, I confess, were my former feelings upon this subject, and my antipathy to the Tincture of Cantharides would have probably continued, had I not been persuaded by my friend Doctor Thomas Beatty to give the medicine a fair trial. He alleged in its favour, his own experience, and that of his

father,* who had for many years employed tincture of cantharides in the following formula:

℞ Tincturæ Cinchonæ Compositæ ℥v.
——— Cantharidis
——— Opii Camphorat, āā ℥ss.
m. Ft. Mistura.

One drachm of this may be taken in linseed tea or barley water three times a day, and in persons above five or six years of age, the dose may be daily increased one-third, until half an ounce is taken three times in the day. Much smaller doses, however, than that last mentioned, will frequently be sufficient to check the violence of the disorder, and, of course, when this happens, the dose need not be augmented. Thus, in the case of a grown up woman, named Mahon, admitted into the Meath Hospital on the 17th of May last, the maximum dose was a drachm given five times a day. This case was treated under my direction, by Mr. James Costello, and was of three weeks' standing when admitted. I treated, along with Mr. Nicholl, a young lady aged nine, who was seized with the first symptoms of the disease, on the 13th of May last. On the 6th of June she commenced taking the medicine at the rate of a drachm three times a day; on the 8th the diminution in the hooping was evident, and on the 13th she did not hoop more than twice a day. There was no occasion to augment the dose of the medicine in this case.

If necessary I could relate many other cases in which this medicine producedly a most decided good effect; but at present I shall content myself with observing that the Tincture of Cantharides, exhibited in the formula recommended by Doctor

* The late Doctor Beatty was a zealous defender of the use of the Forceps in cases of difficult parturition.—He used it most successfully. His example has been followed by all our best accoucheurs, notwithstanding the efforts of the *perforators*, who had the weight of Dublin authority on their side.

Beatty,* has the peculiar merit of producing its good effects without giving rise to urinary irritation, at least in a very great number of cases no such irritation takes place. Doctor Beatty informs me that he has been equally successful in curing the disease in infants by means of this remedy exhibited in appropriate doses; such cases are seldom placed under my care, and therefore I cannot speak from my own experience on the subject. What influence is exerted by the cochineal and other ingredients contained in the compound tincture of bark, and camphorated tincture of opium, I am unable to determine. A very important observation is made by Doctor Mackintosh: "Change of air is extolled by some individuals, but is often productive of great mischief by occasioning a return of the disease. It is an important fact, that during the late epidemic, which was the most severe I have ever witnessed, all the children that were moved for change of air, had the disease the longest." Now it is very remarkable that the late Doctor Beatty made it an invariable rule to keep his patients confined to their bed-room until the cure was completed, and he used to lay great stress upon an accurate observance of his directions with regard to this point. I have reason to believe that in the great majority of cases the recovery of the patient is much accelerated by this means. This fact alone is sufficient to demonstrate that hooping cough is owing to something very different from mere inflammation, for after the first violence of catarrh, laryngeal inflammation, or bronchitis, has subsided, change of air often acts like a charm in removing the disease.

Since I have adopted the remedy above mentioned, I have laid aside the tartar emetic ointment altogether; indeed I never derived any evident or permanent advantage from its application in hooping cough, either over the stomach or the spine.

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* I am told that this formula is to be found in some modern author; be this as it may, it was not employed in Dublin until introduced into notice by Doctor Beatty.

HYDROSULPHURET OF AMMONIA.

In the second Number of this Journal, Mr. Newton has described a case, in which the Hydrosulphuret of Ammonia appeared to exert a very powerful influence upon the action of the heart. It was used at the recommendation of Doctor Marsh, who, it is stated, has found, that in all the cases in which it was exhibited, it had "produced a powerful effect in lowering the pulse."

In another part of the same paper, the Hydrosulphuret of Ammonia is by implication preferred to digitalis, which is thus spoken of: "Many objections apply to the treatment by digitalis; it is always a dangerous, and often an uncertain remedy, and even in those cases in which it succeeds best, it soon loses its efficacy; its tendency to disorder the stomach is often such as to forbid its employment; it was, therefore, a great desideratum in medicine to devise some plan of treatment which would lower the circulating system, without producing permanent debility."

I have long felt strongly the existence of the desideratum here spoken of, but have never entertained any very sanguine expectations of a remedy being discovered which would lower the circulation, without producing debility. I was, therefore, much pleased to meet with the above announcement, and hastened to exhibit the Hydrosulphuret of Ammonia to many of the patients in the Meath Hospital. Some of these patients laboured under hypertrophy, with increased action of the heart, in others the heart's action was natural, and in some no disease existed except a cutaneous eruption. The remedy was given in doses gradually increased to twenty-five or thirty drops, four times a day, largely diluted, as recommended by Doctor Marsh. *In no one instance did it exert the slightest effect upon the heart's action or the pulse.* After it had failed in a few instances, I caused a new supply of the medicine to be procured, and the doses were administered by the apothecary of the hospital, in order to insure its being taken as directed.

EVACUATIONS OF BLOOD FROM STOMACH AND BOWELS, PRODUCED BY IRRITATION OF CHLORINE.

(*Case Reported by* Mr. WATSON.)

1832, *June* 17*th*.—Julia Casey. Phlegmatic temperament. She is a servant, and was attending her master, who died of the cholera spasmodica, six weeks ago, and she remained in the house along with another female servant, younger than herself considerably, in order to clean the furniture.

The apartments were fumigated with chlorine, and although necessitated to remain in them, as before mentioned, they were directed to keep the windows and doors closed constantly, to render the disinfecting powers the more effectual. This was repeated day after day for some time.

From the first day she felt pain in the chest, with stuffing and choaking, also tightness of the præcordial region particularly, which was very oppressive. Then she felt pain over the epigastric region, and could not bear to lay her hand upon it, for soreness. These symptoms persisted for several days.

She describes very unpleasant sensations, arising from the epigastric region, and passing upwards along each side of the sternum, and along the neck on each side of the trachea, and up into the head. She had great cough. This state continued for four or five weeks. Latterly she used to feel faint, and quite unable to continue working, without going and sitting a while in purer air.

One morning she was seized with sudden vomiting. A quantity of dark liver-like blood was thrown off her stomach, without much effort at straining. Shortly after she took castor oil, which she repeated again immediately, then she passed some hard blood by stool, and vomited again black blood. This occurred several times during three days. The blood which was passed the latter part of that time was clearer

and brighter than the earlier effusions. This pouring forth of blood relieved the præcordial oppression, and sense of suffocation, &c., nor had she any pain with these evacuations. During these attacks she was often senseless, (this might be from the loss of blood merely, or it might result from the noxious influence of the gas,) she did not cough up blood. The other servant, who was with her during the whole time, was frequently seized with coughing and spitting of blood. She complained often of stuffing in her chest, and stitch in her side, with soreness. She took pills which checked the hæmorrhage, (from her account they would appear to have been acetate of lead.) Since admission she has only passed blood once by stool. She was insensible when they removed her. The surface of the body is exsanguineous; pulse very feeble.

Under the use of a mild diet, and gentle aperients, this woman gradually recovered.

HYSTERICAL VOMITING AND NEURALGIA, CURED BY VERY LARGE DOSES OF ASSAFŒTIDA.

(*Case Reported by* Mr. DWYER.)

Meath Hospital, July, 1832. Anne May, æt. 29, married, has had four children, her last, two years since, still-born; after which confinement she got cold, with pain in the left side, shooting from the scapula to the region of the heart. She was admitted into this hospital three months ago, for a severe attack similar to the present, together with some fever, and was dismissed relieved, having been bled, leeched, and blistered. Admitted on the 5th July. She states that, for the last fortnight, she has suffered from pain shooting from the back-bone, and along the course of the ribs till it arrives opposite the heart, when vomiting of bilious matter is induced by its severity. Never vomits without this precursory pain. At present, she rejects every thing from her stomach. No tender-

ness of any part of abdomen on pressure. Her general aspect is excited, and her respiration is extremely hurried, irregular, and accompanied by heaving of the chest, and occasional sighing. This state of the respiration appears to persist during the whole period of the attack, which, however, in its other symptoms is variable, and consists of paroxysms, alternating with intervals comparatively calm. She lies for some time quiet on her back, and then suddenly starts up, rolls about in the bed, shrieking with agony, weeping, and agitated by violent eructations and vomiting, without, however, any disturbance of the pulse. Has *never had globus hystericus*, nor has she been subject to headach or pain in the temple; appetite, previous to this attack, pretty good. *Catamenia always regular;* bowels generally confined; urine scanty, and deposits a copious sediment; pulse, 64; tongue, moist; complains of thirst, (perhaps from vomiting.)

On examination of the spine, she shrinks from pressure over the dorsal spines and along the projections of the ribs round to the left mamma. No palpitatation of heart; no morbid phenomenon detected by stethoscope.

6th. Ordered actual cautery, to six points on each side of dorsal spines, and assafœtidæ, gr. x., 2ndis horis.

7th. Paroxysms of pain and vomiting occurred frequently up to 12 o'clock last night, when they ceased, and have not since returned. The cautery was applied, and she took 22 pills. Bowels confined, urine scanty, and thick; other functions natural. Some tenderness still, respiration now quite tranquil; slept well.

Enema fetidum bis die,
Repet. pilulæ 3tiis horis.

8th. No return of pain or vomiting; there is still tenderness on pressure, but in less degree; slept well, took 16 pills, and had the two fetid enemata, which produced two scanty evacuations of hard fæces; respiration and other functions natural; bad appetite, she does not care for food.—Convalescent.

13th. To day she has some wandering pains in the right side, not severe.

Observations.—My experience in other cases of a similar nature, enables me to attribute the cure of this to the assafœtida, and not to the cautery. It is worthy of attention, that she had taken 120 grains of assafœtida before the disease yielded, and that the improvement was permanent. In hysteria, when the patient can be prevailed on to take this medicine, I know nothing more efficacious than assafœtida; but to be serviceable it must be *given in very large doses*, as has been long ago remarked by practical physicians. When exhibited in small doses, as is usually the case, it too frequently appears to be inert, and consequently has of late rather fallen into disrepute.

Art. V.—*Observations on Epizootic Cholera.* By Fleetwood Churchill, M. D.

TO THE EDITOR OF THE DUBLIN JOURNAL OF MEDICAL AND CHEMICAL SCIENCE.

Sir,

The accompanying case appears to me interesting as illustrative of the great influence of disease of the mucous membranes upon the developement of animal heat. Should you consider it of sufficient value to occupy a page of our National Journal, your insertion of it would oblige

Yours, &c.

F. Churchill.

A strong black horse rising seven, belonging to my friend, William Hogan, esq., Leeson-street, was seized on Friday morning, July 13, at 4 o'clock, with a violent purging. Matter at

first natural in appearance, though fluid, afterwards resembling dirty water. The surface of the body speedily became cold, and he seemed in some pain. He was sent down to Mr. Walton's, Veterinary Surgeon, Exchequer-street, who gave me the following account of the symptoms he presented:

The purging continued excessive, the matter voided being exactly like dirty water; the pulse was imperceptible; the surface of a death-like coldness; his tongue was cold, and likewise his breath; respiration was hurried; he lay down on his first arrival apparently from exhaustion.

Mr. Walton at once administered a stimulating aromatic draught, covered him with clothing, and bled him; at first the blood flowed slowly, afterwards with greater freedom. The blood coagulated, and there was a fair proportion of serum and crassamentum.

After the bleeding the pulse became perceptible, although very weak. I saw him about half-past nine o'clock, a slight reaction appeared to have taken place; under the clothes the the skin was warm, and there was some sweating; but his head and nose were still much colder than natural. He was standing, and several men were employed in rubbing his belly and legs with spirits of turpentine. This pressure on the belly did not cause him to wince, but seemed rather to relieve him.

His bowels now were less frequently purged, and the dejections had a more natural appearance, with, however, an almost putrid stench.

The frictions were discontinued, as the skin appeared to smart from the effects of the turpentine.

He lay down apparently much fatigued, and soon after as Mr. Walton informs me, he rolled about as though in pain, the pulse sunk, coldness supervened, and he died at 12 o'clock.

During the whole of the attack his limbs were never spasmodically affected.

I cannot discover that he voided any urine from the time of his attack.

Through the kindness of Mr. Walton, I had an opportunity of examining the body, about sixteen hours after death. The stomach presented no morbid appearances, it contained a great quantity of half-digested food. The termination of the epithelium was beautifully distinct. The mucous membrane of the duodenum and jejunum appeared healthy. The contents of these intestines were mixed *with bile.* The ileum presented some considerable morbid changes. The mucous membrane was *much softened;* a slight degree of friction sufficed to detach it; its surface was of an *uniform dirty red colour,* covered with a bloody mucous secretion. This part of the intestinal tract contained no feculent matter, merely (in common with the larger intestines) a dirty fluid, varying a little in consistence. The mucous membrane of the colon and rectum appeared healthy, save a slight degree of submucous infiltration. The muscular coat throughout possessed its natural firmness. The peritoneal coat was not injected, neither were the intestines adherent; a small quantity of serum was found in the pelvis. The lungs were healthy, containing some very black, thick fluid blood. The substance of the heart was rather flabby. The liver was healthy, and the gall bladder full.

For some time previous to his seizure, the horse had been in excellent health, and has not lately been physicked. The day before (Thursday) he was sent to Dycer's auction to be sold. After the most careful investigation, nothing can be ascertained to which the attack might be attributed; he was ridden a few times up and down the yard, then taken into the stable and clothed lightly; a small quantity of water and grass was given to him; and early in the evening he was returned unsold, and, apparently, perfectly well. The stable itself is light, airy, and comfortable. And another horse of Mr. Hogan's, inhabiting the next stall, continues perfectly well.

ART. VI.—*On certain Injuries of the Head, with Remarks on the Utility of reporting Cases in Medical and Surgical Practice.* By PHILIP CRAMPTON, M.D., F.R.S., Surgeon General to the Forces in Ireland, and Surgeon in Ordinary to the King; one of the Surgeons of Stevens's Hospital, and of the County of Dublin Infirmary.

IT has often been objected to medical men who are extensively engaged in practice, that they seldom communicate the result of their experience in such a way as to make it as available as it might be to the junior part of the profession. That they occasionly put forth large and valuable works on particular departments of the healing art, and communicate through the periodical press, the particulars of some remarkable case or brilliant operation, is not to be denied; but this is not precisely the kind of information, or I should rather say, it is not the *only* information which the younger part of the profession are most anxious to obtain from them. They would, above all things, desire to learn in the shortest, simplest, and least expensive way, how a professional man of experience would manage certain cases which are of almost daily occurrence, but with respect to which the greatest diversity of opinion and practice prevails among the highest authorities.

They read, for example, that in France amputation is performed while the gangrene (from external injury) is rapidly extending up the limb; in Great Britain, on the other hand, this practice is reprobated by the *generality* of teachers and of systematic writers.*—Again, amputation of the thigh is performed in one manner in London, in another in Edinburgh, and in a third in Dublin; the same may be said of lithotomy. In England I believe it is the general practice to open large

* It would appear, however, that opinion on this point has undergone a considerable alteration within the last few years in England.—*See* SIR A. COOPER'S *Lectures*—GUTHRIE *on Gun-shot Wounds*, and HENNEN'S *Military Surgery*.

chronic abscesses by a small valvular puncture, and to draw off the fluid in portions from time to time. In Paris and in Berlin, on the contrary, the abscess is opened by an extensive incision, so as to give issue to the whole of the contained matter at once.—Again, in the treatment of compound fracture of the skull, the trephine is much more generally employed in London than in Dublin. But without multiplying examples, I am warranted in stating broadly, that the modes of practice in London, Dublin, Edinburgh, Paris, and Berlin, are on some of the most important points of Surgery not only different from, but often absolutely opposite to each other. How useful then must it be to the practitioner to be enabled to examine and compare the facts and the reasonings on which this diversity of opinion and practice is founded, and how noble a task for an enlightened criticism, uninfluenced by prejudices either national or personal, to enable the inquirer after truth to view those various modes of practice by the clear light of science and experience. It may at the first view seem strange, that at a time when a greater intercourse exists between the different capitols of Europe, than a few years since existed between different parts of the same kingdom, and when by means of a weekly periodical press, the opinions and practice of one country are scarcely announced, when they are known in every other; that there should be not merely a national but almost a provincial surgery. It would be foreign from my present purpose to investigate the causes of this diversity, although the inquiry might not be devoid of interest or even of utility, but I may observe in passing, that the causes lie deep among the most immutable principles of human nature. Uniformity of practice in an art which mainly rests on human opinion is plainly impossible, and if possible would not be desirable unless the art were brought to the utmost degree of perfection of which it is susceptible; but, as this can never happen, so long as the human mind is progressive in improvement, all that can be done for the advancement of knowledge, is to engage the greatest possible number of intel-

ligent, active, and independant spirits in the pursuit, and to bring the result of their separate labours into juxta-position, in order that they may be examined and compared, and their relative merits experimentally ascertained. In this way there will be a gradual and therefore safe approximation to uniformity of practice, and a pro tanto advance towards the perfection of the art. That the publication of clinical lectures, and of (what is perhaps of still more value) the incidental clinical remarks of the hospital surgeon while "going his rounds," has done much towards the advancement of surgical knowledge, is not to be denied; but until the practice becomes more general than it is at present, I believe that hospital surgeons cannot perform a better or more acceptable service to the profession and to the public, than by becoming their own "reporters," and communicating from time to time, through the medium of the periodical press, the results of their experience, without waiting until they have time to give them the form of a regular treatise, or what is still more deplorable, to expand them into a book; and surely if the practice of adulterating valuable medicines by the addition of some nauseous, or, at best, useless ingredient, be a punishable offence, those authors should not escape with impunity, who overlay some useful practical observation with the rubbish of a library. It may be objected to the plan of self-reporting, that it affords too wide a field for the exercise of vanity or of self-interest, and that even if the public had a sufficient guarantee for the integrity of the reporter, the influence of previous opinion, and a variety of other motives might induce him to view *his own case* in a very different light from that in which it might appear to a mere looker on; and this to a certain extent is true; but it is equally true, that a perfect corrective is at hand, and should always be applied. Let no case be reported on the authority of any individual, however trust-worthy. Let every possible security be given against error as well as fraud; if the case occur in hospital practice, misrepresentation will

scarcely be ventured upon, and error will easily be detected and exposed. If in private practice, let some medical practitioner, who is acquainted with all the circumstances of the case, be referred to by name; as a further security, the name and residence of the patients (whenever it can be done so with propriety) should be inserted in the case; for want of this attention, surgical cases in particular, (however faithfully recorded,) are deprived of the greater part of their value; for it is not enough that an operation should be well and successfully performed, the great point to be ascertained is, how far it has been *permanently useful*, and this may be known by a re-examination of the patient after the lapse of a considerable time. We have read of the cutting out, "*with success*," of large portions of the ribs, when affected by cancer, and the cutting off one-half of the face, when affected by the same disease; of removing a tumour of such dimensions, that it was difficult to say whether the tumour was cut away from the man, or the man from the tumour. But how far the subjects of these proceedings were compensated for the immediate pain and danger attendant on the operation, by a prolongation of life, or an abatement of suffering, can be learned only by following them from the hospital to their homes, if, indeed, they ever reach them after such "successful operations."

A Periodical Medical Journal, then, if conducted on the plan to which I have alluded, would faithfully reflect the state of medical opinion and practice in the country in which it was published, it would be, in a manner, the auto-biography of the healing art, the only kind of biography which, perhaps, has a claim to implicit credit; for it has been well remarked by a great writer, himself the best of biographers, that whatever desire the auto-biographer may entertain of appearing in a different character from his own, the man, as he is, will appear through every disguise he may assume. And so it is with medicine, the clinical cases, lectures, and remarks, which are published in the Weekly Medical Journals of London and Paris, have

given us not only a professional, but almost a personal acquaintance with the distinguished men whose modes of practice, and even whose modes of thinking and of speaking, they so graphically describe.

The peculiarities which distinguish British from French surgery, are now as well known to the students in the Dublin hospitals, as to those who group round Mr. Brodie, Mr. Lawrence, M. Dupuytren, or M. Roux, in St. George's, St. Bartholomew's, the Hôtel Dieu, or the Charitè. They can clearly perceive, that while the distinguishing character of the one is simplicity of practice, that of the other is complexity; and, *perhaps*, they may be disposed to think that, on some occasions, a *medium* might, with advantage, be found between "the dose of house-physic and keeping quiet," and the saignée, and sangsues, the boissons adoucissantes and delayentes, the potion calmante, the lavements and the demi-lavements, every third or fourth hour, and a variety of other remedies, which can leave the subject of so much skill and attention but little time for needful repose.

I intimated at the beginning of this paper, that the modes of practice in certain severe injuries of the head, were somewhat different in London and in Dublin. The chief difference appears to consist in this, that in fracture of the skull with depression of the bone, the trephine is less frequently employed in Dublin than in London. In Dublin we conform in general with the rule of practice as originally laid down by Mr. Dease, (who preceded Desault by many years,*) namely, "in fractures of the skull with depressed bone, *whether complicated with wound of the scalp*

* Mr. Abernethy is not correct in placing Desault before Dease. Mr. Dease's work on wounds of the head was published in 1778: Desault's thesis on his becoming a member of the College of Surgeons, is dated 1776, and he was not appointed a surgeon to the Hotel Dieu, until the year 1788.—*Eloge de Desault, par Bichat.*

or otherwise, no attempt should be made to raise the depressed bone, *unless very decided symptoms be present of compressed or irritated brain.*" In London, on the contrary, the rule of practice seems to be, "that if the depressed bone be exposed in consequence of a wound of the scalp, the trephine is to be applied to elevate the depressed bone, *whether symptoms of injury of the brain exist or not;*"* either practice may be supported by the most specious arguments, and each has the sanction of the highest authority. It is plain, however, that in this case the question cannot be decided either by argument or authority, but solely by comparative experiments and observations conducted on a very extensive scale. I doubt, however, whether any individual, no matter how extensive his experience may have been, has instituted a sufficient number of experiments, or observed a sufficient number of facts, to establish definitively either of the opposite doctrines. In surgery, as in every thing else, extreme opinions, or opinions which are not qualified by exceptions and limitations, are seldom safe. I own, therefore, that the opinion of Mr. Dease,† qualified as it is by the exception in respect to those cases in which there are symptoms of compressed or irritated brain, has ever exercised a strong influence over my mind, and I may add, over the minds of all those who, like myself, received their earliest surgical impressions from the lessons and practice of Mr. Dease. I am quite aware that early impressions in favour of any particular mode of practice, are extremely apt to influence our opinions in after life, and that "to seek the testimonies of truth," (as Cicero beautifully expresses it,) "*ex animis consuetudine imbutis,*" is nei-

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* See Sir Astley Cooper's Surgical Lectures in the Lancet. Mr. Brodie's Paper on injuries of the head.—*Med. Chirurg. Transactions,* vol. xiv. p. 412.

† "The more eligible and rational method of treatment in all those cases, (fracture with depressed bone,) I believe will be, that of not being precipitate in applying the trepan, as long as the patient remains free from symptoms that would indicate the necessity of it, &c."

ther philosophical or safe;—but on the other hand, those who received their first impressions from the lessons and practice of Mr. Pott, are liable to a similar imputation of undue influence, operating in an opposite direction; we can only, therefore, approach to a solution of the problem, by placing in juxtaposition, the *practice* of those who in different countries cultivate the same field of inquiry on a great scale, although by different means. The advantage of this method is well illustrated by what has happened within these very few years, with respect to the treatment of syphilis.

It was long received as an unquestionable truth, that no *true* syphilitic sore (as it was called) could be cured without mercury; that left to itself, it was (to use the language of Mr. Hunter and Mr. Adams) "invariably progressive." Every sore, whatever might be its origin or character, that did not obey this law, and either healed *without* mercury, and would not heal *with it*, was pseudo-syphilis, or the result of some newly developed morbid poison. When our army-surgeons, however, observed, that in Spain and Portugal all sorts of sores of syphilitic origin were curable without mercury, we began to think that it might be as well to try the experiment in England; the result is well known. Now I think it is quite plain that nothing short of this great comparative experiment, tried not on a few individuals, but on nations, could have effected so great, and so important a change in the opinions of men in so short a time. Before I conclude this part of the subject, I think it but fair to observe that the practice of abstaining from the use of the trephine, *unless there were decided symptoms of compressed or irritated brain,* was adopted by Dease in Dublin, O'Halloran in Limerick, Desault in Paris, Callisen in Stockholm, Abernethy in London, at a time when Mr. Pott's authority, backed by the authority of all antiquity, exercised the utmost influence over the minds of surgeons in every country in Europe.* There is

* I have often heard Mr. Dease say, that at the commencement of his professional life, (between 50 and 60 years since,) it was the duty of the senior appren-

strong ground, therefore, for concluding, that those experienced surgeons did not depart from the established practice, until a constant experience had convinced them of its dangers, and it is strongly corroborative of the justness of their views, that the negative practice (as it may be called) has been adopted by those surgeons, who have, beyond all comparison, enjoyed the greatest opportunities for observation.*

I select the following case from a great number, not because it presents any peculiarity, but on the contrary, merely because it tends to illustrate the practice which is adopted in one of the largest hospitals in this city, in a description of injury of very frequent occurrence.

CASE OF COMPOUND FRACTURE OF THE SKULL TREATED BY MR. CUSACK.†

James Fagan, aged 23, a tall and powerful man, rather full than otherwise, admitted into Stevens's Hospital at 12 o'clock of the night of the 17th of March, 1832, received a severe wound, five inches long, from a dragoon's sword (convex on its cutting edge) over the right parietal bone. The sword had cut through the bone and membranes of the brain, as some cerebral substance appeared on the lips of the wound. When admitted, he was violent and incoherent, roared very much while being dressed, answered questions with reluctance, and then incoherently; vomited twice, skin warm, pulse 92, and weak. The wound was inflicted about half an hour before his admission. When struck, he fell forwards, and lay insensible for five minutes, then leaped up, made a rush at the door, as if to escape, but fell again. He had been drinking for some hours, when he received the wound.

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tices to go to the Hospital at an early hour on every Monday morning, and have all the persons who had suffered fractures of the skull during the festivities of the preceding Sunday evening, scalped, and ready for trephine at the visiting hour.

* Larrey Campagne de Russie, p. 140. Hennen, p. 308.

† Extracted from the Hospital Journal, by my Pupil, Mr. Hamilton.

March 18. Present state. He lies on his side as if asleep; his eyes closed; when roused and asked a question, he moans and answers peevishly, but often intelligibly. His whole aspect and manner is that of a person oppressed with drink and sleep. When much roused, he can tell *where* he received the injury, but not *how*. Says he has a pain in his head, points to the wound with his hand, and immediately relapses into a state resembling tranquil sleep. Surface of the body warmer than natural; pulse 88, small and variable, becoming rapid when he moves, or is raised in the bed; tongue moist, but brown in the centre. Pupils of equal size, contract on exposure to light; has some cough, which seems to distress him very much, for when it attacks him, he grasps the bed with both hands, and groans with agony; has vomited four or five times during the night. On removing the dressing this morning, a good deal of cerebral substance mixed with blood escaped from the wound.

℥xvi. of Blood were taken from the arm.
Ordered a Bolus of Calomel and Jalap. Fever diet.

March 19. The bolus has not operated, was probably rejected by vomiting A pint and a half of urine drawn off by the catheter last evening. Got some sleep; did not rave; is more sensible; answers when spoken to, but still with reluctance; would not allow the catheter to be passed this morning, but about a pint of high-coloured urine voluntarily passed afterwards. Pulse 75, soft and regular. Tongue brown at the centre.

Ordered a purging Enema.

March 20. More torpid to-day; moans frequently; complains of pain in the head; pulse 55 when he lies quietly, but when he is disturbed, it rises to 80. Pupils natural; no stool; he will not shew his tongue.

℥xx. of Blood taken from the arm.
Pills with Calomel and Colocynth, and a
Cathartic Enema.

Wound glued together by lymph and pus.

March 21. Bowels well freed; stupor not so great; pulse 68; puts out his tongue when desired; passes his urine voluntarily; wound looks clean.

xxiv Leeches to the head; a Cathartic Enema.
2 gr. of Calomel every 3 hours.

He continued much in the same state, but gradually becoming more sensible, until the 24th, when he appeared more torpid, and at 4 o'clock, P. M. he had a violent convulsive attack, four men could scarcely keep him in the bed; three hours afterwards he had another fit equally severe, which was followed by great stupor. *As there were now evident symptoms of irritated, and probably compressed brain*, it was determined, in consultation, by Mr. Crampton, Mr. Peile, Mr. Collis, Mr. Wilmot, and Mr. Cusack, to lay bare the wound in the skull freely, and then to act according to circumstances respecting the removal of a portion of the bone. As a considerable quantity of brain had escaped from the wound in the first instance, it was obvious that both tables of the skull, the membranes of the brain, and the brain itself, had been divided by the sword, and it was probable that the inner table of the skull had been separated from the outer, and driven in upon the brain: and such, upon a careful examination with the probe, seemed to be the case. A slip of bone about $\frac{1}{4}$ of an inch broad, and three inches long was removed from the upper edge of the divided bone, by means of a *straight saw*, about four inches in length; the operation was performed by Mr. Cusack, and was effected in a very few minutes, and with great ease. On removing the slip of bone, it was ascertained that the inner table was detached, so as to form an acute angle with the outer table. Some softened cerebral substance escaped from the wound; he had one slight convulsive attack after the operation, but he soon became much more sensible, and now (four hours after the operation) he lies tranquilly with his eyes open.

March 25. Had a convulsive attack at 10 o'clock last night, but is quite free from stupor this morning; answers questions

freely; pulse 76, small and weak; complains of his head. Every thing went on favourably until the 27th of March, when a small red pulsating tumour, about the size of a pea, appeared in the centre of the wound.

Ordered ℥i. of infusion of Cinchona three times a day.

March 28. The fungus has doubled its size; is of a light purple colour, and pulsates slightly; wound granulating; general symptoms favorable; no material change occurred in the local or general symptoms, until the 13th of April, when the fungus began to enlarge considerably, and he became more torpid, and irritable; complained of pain in the head; the fungus pulsates strongly, and is as large as a small walnut. About the 16th of April the fungus began to decline rapidly in size; the general symptoms at the same time became more favourable. On the 20th the fungus had disappeared, and about the 1st of May the wound was completely healed.

Fagan was discharged from the Hospital on the 15th, in good health, but his memory was much impaired; he was able, however, to resume his work as a pipe-maker. I saw him this 20th of July, 1832; his health is excellent, but his memory of *words*, but not of *things*, is greatly impaired; he told me "he knew every thing as well as ever he did, but he could not put a name on any thing." I shewed him a button, he laughed, and said "I know what it is very well, it is a ba, ba, ba,—Och! I can't say it, but there it is," pointing to a button on his own coat.

Observations.—I think it probable, that had the portion of depressed bone been removed in this case in the first instance, namely, the 17th of March—or had the operation been delayed until the 25th or 26th of March, the result would not have been so favourable. The operation, in the first instance, would have been an additional violence to parts already severely irritated, and consequently an additional source of inflammation; it would besides have removed all support from the wounded brain, a great part of which would (it is probable) have escaped

through the opened dura mater. If the patient escaped these first dangers, then came the danger of hernia, or rather fungus cerebri—one of the most frequent and dangerous consequences of wounds of the dura mater. Had the operation been postponed even for a few hours after decided symptoms of cerebral irritation (as evinced by the convulsions) had set in, it would have but aggravated the mischief, by irritating parts already in a state of incipient inflammation.* That operation may be resorted to with advantage, even after the appearance of symptoms, which, if not relieved, almost invariably proceed to a fatal termination, is an important fact which has not perhaps been sufficiently insisted upon; there are some most interesting cases which illustrate this point of practice, reported by Mr. O'Halloran, in the 4th volume of the Transactions of the Royal Irish Academy. As the work is not usually to be found in Medical Libraries, I shall give the substance of two of the cases in as few words as may be.

"Case IX.—Pat. Kelly received repeated blows on the left parietal bone, which produced a very extensive fracture, with a contused wound of the integuments. He went on tolerably well for about ten days; he then became heavy and drowsy; the complaints increased, and when I was sent for, he was comatose, and so much oppressed, that I apprehended an operation would be useless, and had some thoughts of immediately returning; but reflecting on the great resourses of nature, I re-

* The convulsions which are caused by *irritation* of the brain, and which, not unfrequently, appear shortly after a severe injury of the head, are of a very different character from those which are caused by the disorganization of the brain, consequent on *inflammation*. The first appear to be an epileptic character, and are probably connected with a disordered state of the fractures, rather than of the structure of the brain, and are *comparatively* attended with but little danger.

The second usually appear in connection with strabismus and coma at the termination of the train of symptoms called "secondary," from their occurring several days, or even weeks, after the injury has been inflicted, and it is scarcely necessary to add, that they are almost invariably the forerunners of death.

moved the integuments, applied the trephine, and elevated the depressed bone. Immediately after the operation, he opened his eyes, knew me, and spoke. Eight days afterwards I removed a loose piece of bone of considerable size. The next day he had paralysis of the opposite side; he laboured under this partial paralysis for fifteen days and then gradually recovered.

"Case X.—I visited Pat Hayes, who 13 *days before* had received a blow which made a profound depression on the posterior superior part of the right parietal bone; the pulse was slow and weak, but regular; he was quite comatose, and could not articulate. The bone was crushed into bits, and was driven in upon the brain, wounding the dura mater in some places. By means of the probe, forceps, and elevator, (without the trephine,) I relieved the dura mater of all incumbrance. In some time the dura mater rose to its natural height; the diseased parts sloughed off, and he recovered."

If there be any rule of surgical practice more dogmatically laid down than another, it is that which inculcates the necessity of removing all extraneous matters, including splinters of the fractured skull, which, being driven inwards, wound the brain or its membranes; even Desault, who carried his repugnance to the use of the trephine beyond what most surgeons would even now think reasonable, considered this an excepted case. He advises "the fragments to be extracted by the means of forceps, and if this cannot be effected, recourse must be had to the trephine." It would appear, however, from the following case, that even this rule is liable to exceptions.

In the month of September, 1818, Mr. Henry Brougham, a fine, intelligent, and active youth, about 18 years of age, received the contents of a fowling-piece, loaded with snipe-shot, in the centre of his forehead, by the following extraordinary accident. Holding his gun by the upper part of the barrel, he struck the stock obliquely downwards against the bar of a gate, which he wished to push open. The hammer was resting on the copper cap, which it compressed with the whole force of the spring; this pressure, aided by the vibration communicated

by the stroke of the stock against the gate, was sufficient to make the detonating powder explode. From the oblique direction of the barrel upwards, the shot did not strike point blank against the forehead, but somewhat obliquely; it was, however, sufficiently direct to carry away an oblong piece of the integument of the forehead, nearly three inches in diameter, to fracture the os-frontis into small pieces, and to drive the greater number of them deep into the substance of the brain. Mr. B. was carried, in a state of insensibility, by some country people to a cottage, where he was soon visited by a medical practitioner who resided in the neighbourhood, who took some blood from his arm, but did not meddle with the wound. I saw Mr. B. on the following day, he was perfectly sensible, his pulse about 80, small and regular. He distinctly described to me every thing that had occurred previously to the going off of the gun; he told me that when he felt the shock, he had a vague kind of consciousness of what had happened; he raised his hand to his forehead, and feeling so great a wound, he concluded that the shot must have passed through his head. In order to ascertain if it were so, he remembered having passed his hand to the back of his head, where, finding the hair clotted with blood, he concluded that the shot had passed through, and that he had but a few moments to live, "and then" (he added in a voice, which for the first time was tremulous) "I thought of my mother."* The head and face presented a frightful spectacle. The eyes were closed by the great swelling of the eyelids and cheeks. The skin of the face, which was perforated in many places by the shot, was covered with coagulated blood, rendered blacker by being mixed with gunpowder. The principal wound occupied the centre of the forehead, exactly where phrenologists place the organs of eventuality and comparison; here there was a wound of a circular form, above two inches in diameter, and nearly an inch in depth; the bottom of the wound, which rose

* Mr. B. was the only son of a widowed mother, his father was brother to the present Lord Brougham.

and fell with every pulsation of the heart, was covered with a mixture of coagulated blood, disorganized brain, fragments of bone, and some of the wadding of the gun. Having cleared the face and head of the coagulated blood, in which they were in a manner incased, I proceeded to clear the wound of the extraneous matters which were lodged in it; but scarcely had I touched with the forceps a large fragment of bone which was buried in the brain, when the whole body was shaken by a convulsive movement, and he moaned deeply. Of course I desisted from all further attempts to extract the splinters, and determined merely to cleanse the wound with tepid water, of the wadding and gunpowder which lay on its surface: but scarcely had three drops of water fallen on the part, when he cried out in a voice more expressive of terror than of pain,—"Oh, don't! Oh, what's that?" I asked him if I had hurt him. He said "I do not know, but the sensation is dreadful." I now gave up all further attempts at even washing the wound, and merely covered it with a piece of soft lint. The rest of the treatment may be described in a few words. Leeches were applied in large numbers daily to the forehead and temples; iced water to the head, generally; attention was paid to the bowels; iced water and iced lemonade was the only sustenance which was allowed for six days; and at the expiration of this time he was conveyed (eight or nine miles) on a litter, from the miserable hovel in which he lay, to his mother's house in Sandymount. The local treatment was equally simple. The discharge from the wound was gently wiped away from the face as often as was necessary. This discharge contained for several days a large proportion of softened brain, mixed with blood; but the wound itself was not so much as washed for twenty-two days, and even then, nothing more was done than to lift off the small fragments of bone, as they became detached by the process of nature.* This great

* Mr. Colles, with his usual sagacity, warns the surgeon from removing fragments of bone from the brain for a few days after the wound has been inflicted, "in order to give time for the adhesive inflammation to take place; this circum-

wound was completely healed in two months, although small spiculæ of bone were discharged from time to time, for more than a year afterwards. The cicatrix when healed, was deeply depressed, and pulsated like the fontanelle in the head of an infant. Mr. Brougham resumed his studies in Trinity College, and graduated at the end of the year. I met him by accident six or eight years afterwards, and recognized in my old patient one of the most amiable and valuable clergymen in Ireland. How far the mental phenomena recorded in either of those cases may be consistent with *that part* of phrenology which gives "a local habitation and a name" to each faculty of the mind, I do not pretend to decide; but I take it for granted, that those who are deeply versed in the science, will find no difficulty in offering an explanation of the facts.

(*To be continued.*)

ART. VI.—*Morbid Dissection of a Case of Hydrocephalus.* By JOHN COLVAN, M.D., Licentiate of the King and Queen's College of Physicians in Ireland, Physician to the Armagh City Fever Hospital, &c. &c.

ON inspection of Mr. N——'s child's head thirty-six hours after death, a soft tumor, which to the external feel indicated fluid, and was generally as large as a middle-sized hen egg, protruding at the anterior fontanelle, had completely subsided, the head appeared little, if at all, enlarged; on cutting through the dura mater no fluid appeared exterior to the brain, but every where marks of congestion and inflammation; a large quantity of apparently wheyish fluid was contained in the ventricles, which appeared enlarged in their dimensions, and also under the base of the brain. Two abscesses were discovered, one in the left lobe of the cerebellum, the other in the posterior lobe of the

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scribes the depressed piece, hardens the surface of the brain, and thus enables us more readily to lay hold of the fragment of bone."—*Practical Precepts*, p. 20.

right hemisphere of the cerebrum, at its under and exterior surface. Pure pus, well formed, was found in both; the bones were sound, though there had been a slight discharge of pus from both ears during life, particularly from the left. About 12 oz. of serous fluid were contained in the head. The disease had lasted four months, the symptoms were those usually attributed to *pure Hydrocephalus*, first a febrile excitement, then dulness, and at last an utter neglect of surrounding objects, dilatation of the pupils, constant hanging of the head, and a coldness of the entire body; the eyes had never been distorted, though latterly quite insensible even to a candle. This child had been delivered by the forceps, and with great difficulty, after the head had been wedged in the lower strait of the pelvis for upwards of seven hours. The child was six months old.

This case bears a striking resemblance to one recorded by Doctor Law, in the Dublin Hospital Reports, in which an abscess of the left lobe of the cerebellum was discovered by me, though in that case also the symptoms indicated nothing but what is usually attributed to pure hydrocephalus.

ART. VIII.—*Case of Perforation of the Colon in an Infant, caused by the introduction of an Injection-pipe into the Rectum, and awkward Administration of an Enema.* By T. NUGENT, Esq., Member of Apothecaries' Hall, &c.

TO THE EDITOR OF THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

SIR,

SHOULD you deem the following case worthy of publicity, through the medium of your valuable Journal, your giving it insertion will oblige

Your obedient Servant,

T. NUGENT.

Early on Sunday morning, October 11, Mrs. R. was safely delivered of a fine, and, apparently, healthy boy; the mother

having had, what is usually termed, a favourable time. In about three or four hours after its birth, the child was given (as is often the custom, although of questionable utility,) a dose of castor oil, for the purpose of bringing away the meconium. After the lapse of three hours, the first dose not taking effect, a second dose was given, but with no better success. Early in the following day the grandmother of the child called on me, acquainting me with the circumstance. I directed that a grain of calomel should be immediately given, and in an hour after the following injection:

℞ Mannæ ℥i.
Aquæ Ferventis ℥iv.
Solvetur et Coletur cui adde
℥iv. Olei Ricini et
℥i. Olei Terebinthinæ.
℔ Ft. Enema.

This was administered by the lady's nurse-tender, who was considered by the parents to have used the child roughly, as whilst giving it, it cried much, and blood was observed on the clothes immediately following its administration. The uneasiness, however, seemed shortly to have passed away, as the child soon appeared easy, tranquil, countenance cheerful, and slept soundly. No evacuation (except urine, which it passed all along plentifully and freely) having been procured by any of the remedies employed, it was deemed advisable to repeat the injection; however, from the circumstances attending the administration of the first injection, the cries of the child whilst receiving, and the bloody appearance immediately following the administration, &c., I felt considerable anxiety, and suspecting that some injury might have been sustained, determined upon giving the next injection myself; and when about introducing the pipe into the rectum I observed the verge of the anus all over covered with coagulated blood, upon the removal of which, I then gave the injection without experiencing any difficulty, or producing appearance of pain or uneasiness in the child. Again I repeated my inquiries from the nurse-tender relative to the

appearance about the anus, she informed me that *not* until after the administration of the first injection was any blood observed either at the anus, or on the clothes. In about an hour after the *last* injection the child began to show symptoms of uneasiness and pain, cried and winced much when pressed on the belly, vomited occasionally, and that which was thrown up possessed a strong turpentine flavour. The symptoms continued to increase in severity until its death, which took place in about four hours after. On the following morning the body was examined by an eminent anatomical teacher in this city; the lungs, heart, and liver, were found perfectly healthy; the stomach a little redder than usual, its contents strongly smelling of turpentine; the small intestines appeared somewhat contracted, the large intestines slightly vascular, and about two inches from the rectum the colon was discovered to have been completely perforated, and an opening found existing the size of the end of an ordinary pencil case, communicating with the cavity of the abdomen, through which the greater part of the two injections must have passed; hence the immediate cause of death appears to be the rupture of the coats of the intestine, allowing the escape of nearly two injections into the cavity of the abdomen, and thereby causing peritoneal inflammation, &c. Perhaps it is worthy of remark, that in this case, not until sometime after the exhibition of the last injection did the child seem to suffer pain or uneasiness, except what was transitory, and existed merely during the exhibition of the first injection, at which time the violence seemed to have been sustained, although his countenance shortly after became cheerful, and he slept soundly; also, it would appear from the contents found in the stomach, as well as the matter vomited, both smelling strongly of turpentine, that part of the injections must have passed the ileo-cæcal valve, and upwards through the pylorus, to have been regurgitated into the stomach. I very much regret that circumstances, over which we had no control, prevented the parts being taken away, and a preparation made and preserved.

ART. IX.—*Further Observations on Spontaneous Amputation of the Limbs of the Fœtus in Utero.* By WILLIAM F. MONTGOMERY, M.D., M.R.I.A., Professor of Midwifery to the King and Queen's College of Physicians in Ireland.

SINCE the publication of some observations on this curious subject, inserted in a former number* of this Journal, another example of this extraordinary process has been brought under my inspection, by my friend Dr. John Labatt, one of the Assistant Physicians to the Lying-in Hospital of this city, to whose love of scientific investigation, and polite attention, I have to acknowledge myself, on this and many other occasions, much indebted.

A healthy woman was delivered of a still-born child in the eighth month of utero gestation; the attention of those present was attracted by a tumour attached to the abdomen of the child, which, on examination, was found to be an umbilical hernia of great size, and formed by the protrusion of the liver, stomach, and small intestines, through the umbilical opening into the sheath of the funis, which was distended so as to accommodate them, while the umbilical vessels were a good deal displaced from their natural contiguity to each other, but in other respects observed their usual course and connexions; the opening through which the viscera protruded was of a diameter of about two inches.

On this part of the description, I propose only to observe, that, had the child lived, however unpromising such a condition of the parts might be, it appears that the result might not be altogether hopeless, since we find recorded a case very nearly similar, in which the intestines were reduced, the sac tied, and the child recovered.†

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* No. II, for May, vol. i. p. 140.

† *Bulletin des Sciences, Med.* Janvier, 1828, p. 74.

But, to return from this digression to the condition of the lower limbs, both of which present some degree of deformity, and imperfect developement. The right leg is curved inwards, so that when the child is held erect the outer edge of the right foot is the part on which it rests, a particular in which I may observe, it resembles the same part in Mr. Watkinson's case; and, as happened in his case also, the left leg is the seat of the remarkable pathological change, and exactly in the same situation: just above the ankle there is a deep depression surrounding the limb, and sinking to such a depth as to leave only the bones and skin unaffected by it, the diameter of the undivided part being less than half an inch, while that of the leg, just above the depression, is an inch and quarter; the appearance of the groove is exactly such as would be made by tying a string with great force round the plump limb of a child, and indeed, is such as, in my opinion, could not be produced by any other means. The woman was attended by a pupil, and the child was very much handled and examined by several before I saw it, so that I was not surprised at not finding any ligature on the limb, but the mark of where it had been was so distinct in the bottom of the depression as to leave no doubt of its previous existence there.

It is important also observe, as confirmatory of this view, that the integuments are not at all broken or divided, but carried in with the constricting agent, so that had separation of the limb taken place, each stump would appear skinned over, except at the bones, and so present the appearance of being partially healed, as described by both Watkinson and Chaussier; the foot was a little swollen, and somewhat discoloured; it seemed as if turgid with blood, but was without any appearance whatever of gangrene; the toes were very imperfectly developed. These conditions are well represented in the Plate.

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* London Medical and Physical Journal, vol. liv. p. 38.

Under such circumstances, few, I suppose, will be inclined to doubt the great probability, that, had the child not been prematurely expelled, but arrived at its full term of uterine existence, it would have been found at birth deprived of the lower portion of the limb, as happened in the instances related by the authors already referred to.

An accurate cast of the whole subject was taken, and another of the affected limb, which, together with the parts themselves, are preserved in my museum.

ART. X.—*Contributions to Thoracic Pathology.* By WILLIAM STOKES, M.D., Corresponding Member of the Berlin Medico-Chirurgical Society, and of the Hunterian Society, Lecturer on the Practice of Medicine in the School of Anatomy, Medicine, and Surgery, Park-street, and Physician to the Meath Hospital and County of Dublin Infirmary.

IN the following pages I shall lay before the profession the particulars of a few interesting cases which illustrate some obscure pathological points; adding to these such practical observations as appear to arise from their consideration.

CASE 1.—*Extensive pulmonary abscess, with slight constitutional distress; cure by cicatrization; after a year, death from acute pleuro-pneumony; isolation of a portion of the lung from the inflammatory action, by the cicatrix.*

In the spring of 1829, a young man, by trade a blacksmith, was admitted under my care to the fever wards of the Meath Hospital, for an affection of the chest, which had been of a few weeks standing, and ushered in with the usual symptoms of an acute irritation of the lung. On examination he presented the symptoms of bronchitis, but to our surprise we found that the right lung, from the clavicle to the mamma, sounded dull. *Here,*

and over the shoulder, all the signs of an extensive cavity were discoverable by the stethoscope, cavernous respiration, gurgling, and distinct pectoriloquism. Over the rest of the thorax the phenomena of bronchitis existed.

The patient suffered much from cough and dyspnœa, but under the usual treatment of bronchitis, these symptoms almost completely subsided. He regained in a short time his looks, flesh, and strength; the pulse became natural, and his appetite excellent, although all the signs of the abscess continued unchanged. In this state he left the hospital, declaring himself perfectly well, and, indeed, to an ordinary observer, there was no symptom whatever that would cause a suspicion of organic disease of the lung.

After a few weeks, having caught cold, he returned with a slight bronchitis, the signs of the abscess continuing unchanged, and after some days, again left the hospital, and resumed his occupation of a smith. We then lost sight of him for a twelve-month, when he was again admitted labouring under severe symptoms of pleuropneumony, which had been neglected, and were of five days' standing. It appeared that after his last dismissal, he had enjoyed the most perfect health, although toiling at his laborious occupation, until five days before his admission, when he was seized with pain of the side, cough, dyspnœa, and fever; he continued to work until his sufferings obliged him to desist, and on the following day he entered our wards.

He then presented all the symptoms of the third stage of acute pleuropneumony of the right lung. On percussion the whole of this side both anteriorly and posteriorly sounded completely dull, *except in the sub-clavicular region, where it was comparatively clear.* This, it will be recollected, was the former seat of the abscess. Over the whole dull portion, bronchial respiration, mixed with an intense muco-crepitating râle was audible, but on examining the sub-clavicular region, we

found to our great surprise *that all the phenomena of a cavity had disappeared, and were replaced by a puerile respiration.**

Here was a case full of difficulty. It was plain that the greater portion of the lung was solidified, and had passed into the third stage, but why a small portion of it should have escaped the disease in toto, when the rest was so far advanced, and that this portion should be that formerly occupied by an abscess, was indeed difficult of explanation.

All treatment proved inefficacious, and the patient sunk on the third day after admission, the stethoscopic phenomena having continued unaltered.

On dissection we found the right lung solid over the whole extent indicated by the stethoscope. From the fourth rib downwards, the pleura was covered with coagulable lymph, which being removed, allowed us to see the lung through the serous membrane of a yellow colour. In the superior portion of the lung, the adhesions were evidently old, as considerable strength was required for their separation. On the summit, and antero-superior surface, the peculiar puckered appearance described by Laennec as resulting from the cicatrization of an abscess, was evident.

The lung was then divided in a line running along the situation of the angle of the ribs, so as to separate it into two portions, connected only at the root of the lung. This gave us at once an explanation of all the phenomena. The supero-anterior portion, for a space of three square inches was perfectly crepitating, and not all engorged. This was separated from the rest of the organ by the cicatrix of the abscess, which had been obliterated by the adhesion of its walls, so as to form a cartilaginous septum, superiorly of half an inch in thickness, and easily separable through its whole extent into two layers. This septum ran

* This embarrassing case afforded a temporary triumph to some individuals, sceptical as to the powers of the stethoscope, but I persisted in declaring that dissection would explain the difficulty and vindicate our diagnosis.

from behind forwards, commencing at the summit of the lung, and terminating where the large bronchus separates to be distributed to the upper lobe of the lung; its whole length being more than three inches. Thus the subclavicular portion was isolated, and we found that its bronchial communication was preserved by a trunk passing from the larger tube immediately below the termination of the cicatrix. The interlobular septa in this portion were remarkably hypertrophied, but in no other respect did it differ from healthy lung. The remainder of the upper lobe, the middle, and inferior lobes, were in the state of grey hepatization. No tubercle was found in any part of the system.

This unique case presents many interesting subjects for reflection. It may well be appealed to as a proof of the extraordinary accuracy in diagnosis to which we are led by the use of the stethoscope. By its aid we first ascertained the existence of a cavity of great size in the upper portion of the lung, and in a case where the symptoms could never lead to the suspicion of such a lesion. A year elapses, during which the patient has enjoyed excellent health, until a short time before he is again brought under examination. It is then found that the signs of a cavity have altogether disappeared: that the greater portion of the lung is solidified, but that a small and exactly circumscribed part is healthy, all of which conclusions are perfectly verified by the dissection.

From the situation of the disease, I at first concluded that the cavity was of the tuberculous species, but the progress of the case induced me to alter this opinion, and consider it as pneumonic abscess, an opinion greatly strengthened by the fact of no tubercle whatever being found either in the thoracic or abdominal organs. But whatever may have been its original nature, it is a most interesting fact, that even with the stethoscopic signs of a cavity *in the upper portion of the lung*, a patient may recover perfectly. I say in the upper portion of the lung, as under such circumstances death is generally consi-

dered as inevitable. We had here the stethoscopic signs of an abscess, the previous existence of which was verified by dissection, but the constitutional symptoms of phthisis were absent. As to prognosis, the latter circumstance would be valuable in any case; but how far it is diagnostic of the nature of the abscess, is a point for further investigation.

CURE OF PHTHISIS PULMONALIS.

For a considerable time before I had become familiar with the use of the stethoscope, I felt convinced that pulmonary consumption was more often cured than I had been taught to believe. I had known of so many cases where individuals recovered from all the symptoms of phthisis, that it became probable that all of these cases were not merely bronchitis, but probably, in some instances at least, the effect of tubercular disease of the lung, and I was extremely anxious to meet with cases in which the doubt would be removed by a stethoscopic observation. Within the last three years I have had the good fortune of witnessing several cases, in all of which the most unequivocal indications of tubercle existed, and in which a recovery, more or less perfect, has occurred. The first to which I shall allude is that of a gentleman of a delicate frame, with light hair and fair skin, who consulted me when he was labouring under symptoms of advanced phthisis, the result of neglected cold. He had had hæmoptysis, pain of the side, severe cough, purulent expectoration, and hectic fever; he was considerably emaciated, but had no diarrhœa, nor were his digestive functions materially altered. His symptoms had been of some months standing. Percussion elicited a very dull sound, so as to be perceptible to the patient, over the left sub-clavicular region, and here all the signs of a cavity existed. The rest of the thorax sounded clear, with a large sonoro-mucous râle.

I determined to try the effect of the seton in the neighbourhood of the cavity, and to treat the patient for the bronchitis.

Country air and horse exercise were ordered, and the following remedy, which I have found of great utility in many cases of chronic bronchitis, with copious secretion:

℞ Resinæ Balsam. Copaivæ 3i.
Extract Hyosciami gr. xxiv.
Sulph. Quininæ gr. xii.
Ft. pil. xxiv.
Capiat ii. ter die.

These measures were carried into full effect, and I saw my patient in the course of two months. The expectoration was much less copious, and the checking of the secretion was not followed by any increase of pulmonary irritation. The respiration had become healthy over the whole chest, except in the situation of the cavity, where the signs of an abscess still continued. He complained still of harassing cough, which I found I could relieve by an anti-spasmodic mixture of camphor, ether, ammonia, and tincture of valerian. In the course of a year his general health improved decidedly, and at the end of about fifteen months from the commencement of the treatment, *all signs of a cavity had disappeared*, leaving, in its situation, nothing but a slight dullness on percussion, and some feebleness of respiration. It is now three years since I first saw this gentleman, whose case at first appeared hopeless. He enjoys very tolerable health, but is subject to attacks of catarrh, which have been sometimes severe, but of which he recovers under ordinary treatment.

The next case I shall mention is that of a young gentleman of spare habit, with dark hair and eyes, who consulted me in August, 1830. He had suffered during the previous year from an attack of pleuritis, followed by empyema of the right side, of which he had recovered by absorption, and consequent contraction of the side, when he was attacked by cough, hæmoptysis, and pain of the left side. I saw him soon after the supervention of these symptoms, and found that the upper part of the left lung sounded dull, and presented a decidedly tuberculous râle. His

respiration was hurried, and pulse quick, and his general appearance that of a patient in a rapid consumption. He had spent the former winter in Guernsey, to which I advised him to return. However, previous to his going thither, he went to the country, and on his way returned to Dublin in a month; he then had a violent hæmoptysis, after which, the signs of a tuberculous cavity became unequivocal, and the symptoms greatly aggravated; but there was no diarrhœa, and the functions of the stomach were but little impaired. He returned to Guernsey, and I certainly never expected to see him again. In the June following, however, I was summoned to visit him, and was most agreeably surprised to see him greatly improved in his appearance; he had gained flesh and strength, and on examination by the stethoscope, I could find no trace of a cavity; he had still some cough, and for *some time previously had expectorated calculi*, evidently the result of the cretaceous transformation of the tubercle. During the summer he continued to improve. He has now left this country, but my last accounts of him were, that he was enjoying good health.

In this case, the chief treatment consisted in keeping up the discharge of an issue, established after the formation of the empyema. I beg to add that, throughout the case, I had the benefit of my friend Mr. Woodward's assistance.

A Roman Catholic Clergyman consulted me, during the last year, for symptoms of phthisis, which, in his zeal to discharge the arduous duties of his profession, he had neglected for several months. He was emaciated to a degree, had severe hectic fever, and presented the signs of an extensive anfractuous cavity in the upper part of the left lung. His hair and complexion were dark, and no strumous taint existed in his family. In this case, as in those just recorded, the digestive functions had escaped alteration.

This gentleman was possessed of a strong mind, and insisted on knowing the actual state of his case, of which I felt my duty to inform him without any equivocation. He then said, "My

case appears incurable; but, supposing the disease not so far advanced, what would you recommend for the restoration of my health?" I answered that I would recommend constant counter-irritation, the giving up of his sacred duties, and the diligent use of horse exercise. Six months after this, he again called on me, so altered for the better, that I did not recognize him, so that he had to introduce himself to me. From being a living skeleton he had become corpulent, and his strength was completely re-established. About two months before this he had become decidedly better; soon after which he expectorated a calculus, many of which were subsequently ejected; and after each expectoration of this matter, the patient felt a corresponding improvement. He had followed all my directions to the letter. On examination by the stethoscope I could find no trace of disease, except a slight feebleness of respiration in the upper part of the left lung, a circumstance fully explicable by the cicatrization of the abscess.

I might mention three other cases almost completely analogous to those already described. In all the phenomena of a cavity existed, and subsequently disappeared after a lapse of months, with the recovery of the patient.

On comparing these cases, there appear certain points of resemblance between them, the consideration of which throws light on the question of the curability of consumption. None of these patients, with the exception of the first, presented that general appearance called the strumous diathesis. Their hair, eyes, and complexion were dark; their muscular fibre was originally strong; they presented no marks of external glandular disease; their family was not consumptive; the disease had supervened on an inflammatory attack of the lung; *and in none was there diarrhœa, or other signs of gastro-enteric complication.* I shall again allude to this last circumstance, as I look on it as one of essential importance.

Although, perhaps, the division may not be found to stand a critical investigation, yet I think we may separate cases of

phthisis into two classes, the constitutional, and accidental phthisis. The first, where the tubercular development supervenes, either with, or without some precursory irritation in persons strongly predisposed to it from original confirmation. In these the disease generally runs a rapid course, invades both lungs, and is commonly complicated with gastro-enteric disease. In the second variety, we meet the disease in persons not of the strumous diathesis, and who have no hereditary disposition to the affection. In them the exciting cause is generally an inflammatory attack of the lung. The disease proceeds slowly, is long confined to one lung, the hectic is slight, and often wanting, and the liability to enteric disease is much less. These are the cases in which it appears to me rational to hope for a cure, and justifiable to adopt decided measures, even after extensive lesions have been formed in the lung. With a single exception, these were the cases in which I have witnessed a cure, either by cicatrization of the abscess, the cretaceous transformation of the tubercle, or by both of these modes together.

The influence which gastro-enteric disease exerts in accelerating the fatal termination of phthisis, has been long recognized, but systematic authors have been in error in describing this latter complication, as a necessary part of the disease. I feel satisfied, that under a different mode of treatment from that ordinarily employed, this complication would be much less frequently observed, as in numerous instances I have known it to be induced clearly by the use of purgative medicines. If ever there was a case in which we should be cautious in giving medicines of this description, it is in incipient or threatened phthisis, on account of the great liability that exists to inflammation and ulceration of the digestive tube; yet, in all those cases, which in conformity with the prejudice of the day, are supposed to arise from a *disordered state of the stomach—of the digestive apparatus—a depraved state of the biliary organs—atony of the chylopoietic viscera, &c. &c.*, a set of terms invented to cloke ignorance, and conveying no single clear idea to the mind, this

practice is constantly pursued—a diarrhœa is established, and the digestive apparatus becomes indeed disordered, more from the remedies than the disease. Once the enteritis of phthisis is established, I believe we may look on the case as hopeless, the patient rapidly sinks from the lesion of nutrition; but this is not the sole cause, as numerous stethoscopic observations have satisfied me, that from this period, the tubercular development advances with redoubled rapidity, a circumstance explicable in a certain degree by the sympathetic irritation of the lung.

There is another case nearly equally common, where the life of the patient is shortened, and the chance of cure removed, by the same practice. A young female with symptoms of incipient phthisis, ceases to menstruate. To this, which is the effect and not the cause of the disease, all the symptoms are attributed, and the efforts of the practitioner are directed not to remove the irritation of the lung, *but to force the uterine action.* Emmenagogues, which in British practice means cathartics, are lavished, and the consequences are such as might be expected from this unphysiological and barbarous practice. The pulmonary disease advances rapidly; first, because it is neglected; secondly, because the lung is stimulated by the enteritis induced by the remedies; diarrhœa sets in, and the delicate and amiable patient dies of a "*Galloping Consumption.*"

The remedies from which I have seen decided advantage, are few and simple, they may be enumerated as follows:—*long continued* counter-irritation by the tartar emetic ointment; the use of the seton or issue on some part of the chest; constant exercise; a bland, but nutritious diet; travelling. When there is thirst, anorexia, epigastric pain, or vomiting, tonics and expectorants will do harm. Purgatives must be inhibited, and enemata and the mildest laxatives used when necessary. Wine was not allowed in any of the cases which recovered under my care.

So long as there is any prospect of cure, we should be extremely cautious in using astringents to check the night per-

spirations; great injury is done by the faith in specifics, which still disgraces the practice of medicine. Thus I have often seen patients taking large doses of sulphuric acid, when they lay constantly in bed, enveloped in flannel, and breathing the atmosphere of a heated room. By removing the flannel next the skin, and substituting a cotton waistcoat, by bringing these patients into the open air, sponging the chest, and using frequent changes of linen, they will be really benefited, and the chance of diarrhœa, which is so great from the use of sulphuric acid, will be much diminished.

In a future communication, I hope to lay before the profession, the result of trials of the chlorine inhalation, in cases of phthisis, a mode of treatment so strongly recommended by Coutterau. As yet I regret to say I have not been able to verify the statements of this author.

TREATMENT OF EMPYEMA.

I have now seen so many cases of this disease, the result of simple pleuritis, in which a cure has taken place by absorption of the fluid, and consequent contraction of the chest, that I cannot help believing, the cure of empyema without operation, much more probable than has been hitherto supposed. In all these cases, there had been an attack of acute, or sub-acute, pleuritis, followed in some by symptoms of phthisis, in others by those of catarrh; and at the period when the patients came under my care, all the usual signs of effusion existed in one of the pleural cavities. In most of the cases the disease occupied the left pleura, so that the sign of displacement of the heart, added to the others, allowed of no doubt in the diagnosis, the truth of which was still more established by the subsequent contraction of the side on the recovery of the patient.

The mode of treatment which has appeared to me of most decided efficacy in promoting the absorption of the fluid, is the repeated application of blisters over different portions of the affected side. This is one of the cases in which the mode of

using blisters, recommended by Bretonneau, and Dr. Leahy, of this city, is of the greatest advantage; for as we have to apply many of them in succession, it becomes of the greatest importance to make the treatment as little irksome to the patient as possible. In two cases I have seen the seton employed, and with success; in one, the absorption of the fluid, which was in such quantity as to displace the heart, was rapid. It appears to me, however, that where the process of absorption is not going on well, or where any tendency to its increase is observed, that the seton, by encouraging the external opening of the empyema, may be a dangerous mode of treatment. We may thus bring about a pneumo-thorax from external fistula, one of the most miserable and incurable of diseases.

In the commencement of the treatment, whenever there was decided pain of the side, or any degree of fever, leeches were applied at intervals to the side. I have frequently leeched and blistered the side alternately for a considerable length of time. Any aggravation of pain should be met by either leeching or blistering; and by using a cupping-glass to which an exhausting syringe is attached, he may, from the bites of a very small sumber of leeches, obtain with the greatest ease, and without any distress to the patient, an extraordinary quantity of blood. This mode is far preferable to the scarification. Mr. Parr, who fills the situation of Apothecary to the Meath Hospital with such benefit to the institution, is in the habit, when the hæmorrhage begins to decline, of applying a cloth dipped in hot water round the cupping class where it adheres to the integuments; this produces an immediate flow of blood.

I feel satisfied that by this simple mode of treatment, acted on with perseverance by the physician, and borne patiently by the sufferer, many a case of genuine empyema might be cured. Of course, the sooner we commence from the onset of the disease, the better. In a few cases I have affected the gums slightly with mercury, and apparently with advantage. But I would never recommend this treatment in a case where a stru-

mous disposition existed either in the patient or his family, or where there had been hæmoptysis at any period. The diuretic treatment has not succeeded in my hands in answering any good end.

In all these cases the "*doubtful convalescence*" described by Laennec was observed, and, as here, the symptoms are those of a chronic irritation of the lungs; the stethoscopist may be called to determine the question, as to whether tubercle exists or not. I have been more than once in this situation, and believe that a more difficult case for diagnosis can hardly be met with. The symptoms will seldom afford any assistance, as they may proceed either from incipient phthisis, or be those commonly present during the convalescence of these patients. *And in consequence of the previous disease of one pleura, and the contraction of the chest, we are deprived of the advantages of comparison of the phenomena of both lungs by the stethoscope and percussion.* Thus, if we find the side originally affected to be duller than the other on percussion, this may be explained either by the diminished volume of the lung, or by the growth of tubercle. The same difficulty exists in the case of difference of respiration, and in the phenomena of the voice. But if the opposite lung is the seat of tuberculous disease, it may happen that we may detect the affection; yet in a remarkable case which I lately saw, and in which, after a comparatively rapid recovery from empyema of the left side, tuberculous disease set in, all the stethoscopic signs indicated disease in the left lung, and not in the right; and yet, on dissection, the right lung was found full of miliary and granular tubercles, while the left contained scarcely any. Of this, the preceding considerations afford an easy explanation. The left lung was dull on percussion, from its diminished volume; for the same reason, its vesicular murmur was feeble, while in the right the disease had not become sufficiently extensive to cause a greater dullness, or even an equality of sound. It is plain that, under these circumstances, a greater amount of *disease in the right lung*

would be required to lead to its detection, than in a case where the opposite lung had not been previously affected by empyema.

I shall now detail two cases of aneurism of the abdominal aorta, which, perhaps, should not come in in a paper devoted to thoracic pathology. The intimate connexion, however, of aortic aneurism with thoracic disease generally, is a sufficient excuse.

The first case is one, where, from the symptoms alone, quite independent of any stethoscopic examination, I made the diagnosis of aneurism of the abdominal aorta successfully—a diagnosis, of which, I believe, this is the first instance.

CASE 1.—*Aneurism of the abdominal aorta; double opening of the sac; by one opening, gradual effusion of blood in great quantity under the peritoneum of the lumbar and iliac regions, on the left side; by the other, effusion into the pleura causing sudden death.*

Michael Doyle, aged 43, was in the enjoyment of good health until December, 1827, notwithstanding his having indulged in the use of ardent spirits. His occupation was that of a porter.

About the latter end of the month, after rising to go to work, he was suddenly attacked with nausea, thirst, and an excruciating pain in the lumbar region and abdomen, which obliged him to desist from work. These symptoms continued for two days, when, from the application of a blister to the loins, and the use of purgative medicine, the abdominal pain, which he compared to colic, was removed, but that of the back continued, and extended to the left hip. Of this pain he had several exacerbations during the next six weeks, each accompanied by nausea. He then returned to his occupation, at which he continued till April, 1828. During this period, however, he was subject to frequent sensations of oppression and sinking about the præcordia, accompanied with a feeling of terror. He then entered one of the hospitals, where, from

treatment, he experienced great relief, particularly from anodynes; he was discharged, and continued at his occupation until May 1830, being subject, during this time, to frequent but slight attacks of pain, occurring simultaneously in the back and abdomen. It is to be remarked, that, from the commencement of the attack, his bowels had been in a very costive state. Three weeks before his admission he took purgative medicine, which acted severely, and brought on an aggravation of all his symptoms.

He was admitted into the Meath Hospital on the 11th of June, 1830, three years and a half from the commencement of the disease. He was then emaciated; had great difficulty in walking, from pain in the left hip and thigh, with occasional spasmodic twitches in the left thigh. He had also severe colicky pains referred to the left hypochondrium and iliac fossa, which were relieved by pressure, or by lying on the belly during the exacerbation of the pain. At this time the intestines could be felt contracted and knotty, particularly at the left side, and severe pain of the back always accompanied the attack. The three last lumbar vertebræ were exquisitely tender, as also the left lumbar region and gluteus maximus of the same side. The left hypochondrium and the epigastrium were full and tender, and the lower ribs on each side tilted out; any exertion brought on palpitation of the heart; urine natural; appetite bad; no fever.

Such was the report I received of the case from one of our most intelligent pupils, under whose care the patient was. From the many points of resemblance between this case and that most important one of aneurism of the abdominal aorta, published by Dr. Beatty in the fifth volume of the Dublin Hospital Reports, I felt justified in making the diagnosis of abdominal aneurism. The patient was then examined with this view, when we detected a pulsating tumour of considerable size occupying the epigastric region, and stretching into the

left hypochondrium; its pulsations were accompanied with a sound between the *bruit de soufflet* and the *bruit de rape.*

In the course of a week after admission he was seized with violent colicky pains, and felt, as he expressed it, his bowels gathering up; he had also severe pain in the back; this attack was preceded by two paroxysms of severe rigor, followed by sweating; the attack continued during the day, but was relieved by the operation of a draught of castor oil, when he fell into a profound sleep, and awoke perfectly free from pain; next morning he had no pain either in back or abdomen, nor was there any tenderness whatever of the tumour. From this time to July 6th, he experienced many attacks of excruciating pain, relieved only by opium in large doses, and the application of leeches to the loins; latterly the pain was chiefly referrible to the left iliac fossa, and this day (July 6) we detected another pulsating tumour, perfectly separate from the epigastric, immediately under, and within the spinous process of the left ilium; his countenance was sunk; the belly swelled and exquisitely tender; the impulse of the epigastric tumour was decidedly diminished; he complained of numbness in the left leg and hip. On the next day the tenderness of the belly was greatly diminished; but, from this time to the 10th, he began to sink, frequently falling into a state approaching to syncope. On this day, while speaking to one of the patients, he lay down and expired suddenly, and without a struggle.

Dissection.—The body was emaciated; the face still retaining an expression of suffering; there was no œdema of extremities; the left side of chest sounded dull on percussion; the belly was full, and the epigastric tumour hardly perceptible; but in the left hypochondrium an elongated and fixed tumour was perceptible, extending from an inch above the ilium to the epigastrium. On opening the abdomen, the peritoneum and intestines at first view appeared healthy, but on turning back the flap over the left side, a remarkable colouring of the parietal portion of the serous membrane was observed. The internal surface of the

membrane was healthy, and the colour was found to arise from an extravasation of blood into the sub-serous cellular tissue. Here the effusion was not more than a line in thickness; but on pursuing the examination of the lumbar portion, two large tumours were found: the first and most anterior, between the abdominal muscles and peritoneum, lying principally on the transversalis, and extending from Poupart's ligament to the last false rib; the second, about half the size, lay on the psoas muscle; these tumours were filled with semi-coagulated dark-coloured blood; there was also effusion under the peritoneum in small quantity, so as to colour the serous membrane of the pelvis and bladder extensively. On raising the sternum, a large quantity of clear yellow-coloured serum flowed from the left side of the chest. Here upwards of three pounds of blood were found effused, forming a vast coagulum; on removing which, a large fibrinous clot, about the size of the palm of the hand, was seen hanging into the cavity of the pleura, at its diaphragmatic portion close to the spinal column; this proved to be a fragment of the original sac, and immediately above it we found a large opening leading into a cavity situated between the crura of the diaphragm, and the dorsal vertebræ. This was the original aneurismal sac. The abdominal viscera being now removed, the common iliacs were found healthy, but immediately above the bifurcation, numerous deposits of white matter were seen under the lining membrane, which in several instances coincided with superficial ulcerations; the whole of the aorta, from the arch downwards, was in this state, no perceptible dilatation of the vessel being observed. Immediately above the cœliac axis, the opening into the aneurismal sac, fully an inch in diameter, was found. The sac was of considerable size; its posterior wall being formed of the bodies of the five last dorsal vertebræ, which were deeply eroded. The uppermost cartilages were nearly destroyed, but the most inferior remained unaffected, and formed prominent rings.

The sac had extended under both crura of the diaphragm,

under the right being converted into a solid tumour, consisting of concentric layers of fibrine; under the left crus the two openings were evident, one into the left pleura, the other, that by which the sub-peritoneal effusion had occurred. The aortic valves were ossified; the heart presented concentric hypertrophy of the left ventricle; the lungs and digestive tube were found perfectly healthy.

CASE 2.—*Aneurism of the abdominal aorta; sub-peritoneal effusion, forming in the left hypochondrium a tumour which pulsated in the region of the left kidney; extensive separation of the peritoneum from the lumbar and iliac regions.*

Patrick Saint, æt. 34, a butcher, entered the Meath Hospital on the 5th November, 1830, under the care of Dr. Graves; he stated that about eighteen months previously, while in the act of lifting a weight, he suddenly felt a severe pain in the pit of the stomach, which did not, however, oblige him to quit work; this having continued for a few days, subsided, after which he continued in tolerable health for about twelve months, when, after much exposure to wet, he was seized with shivering, followed by burning pain, and a sensation of pulsation in the epigastrium, vomiting, and palpitation of the heart; since that time he has been in an uninterrupted state of bad health. He has been affected with lowness of spirits, lassitude, starting from sleep and troubled dreams; occasional tendency to fainting; great irritability of stomach, and costiveness; about a fortnight since he felt pain and a sensation of throbbing in the situation of the left kidney.

On admission he was pale and emaciated, with an anxious countenance, complaining of weakness in the loins, and left groin and hip, extending down the anterior part of the thigh, accompanied with a sensation of numbness and coldness. These parts were not tender on pressure, and he can put his foot firmly to the ground, but is lame; and can walk only for a short distance, the severity of the pain being much increased by motion. The pains are much worse at night. A diffused tumour, accompanied with a *bruit de soufflet*, and pulsating violently,

was found occupying the epigastrium, and extending into the left hypochondrium; at the lateral and inferior part of which, a somewhat hard and irregular mass, the size of the palm of the hand, can be felt. This mass does not pulsate, but pulsation can be traced along the margin of the ribs, to the situation of the left kidney, where it becomes very evident. The pulsation in the epigastrium is more evident while he lies on his back, becoming less so when he sits up or lies on either side; when he goes asleep lying on his back he is troubled with night-mare; the men in the ward are disturbed with his moaning in his sleep, and his cries of "get off, get off," as he fancies some person to be lying on his chest. The sounds of the heart are heard over the whole chest with a natural impulse. He has no cough nor dyspnœa, bowels costive, urinary functions healthy. He used to remark that he felt as if the food stopped at the left kidney.

Nov. 23. The hard non-pulsating mass in the left hypochondrium is now greatly enlarged, reaching nearly to the crest of the ilium. He complains of considerable pain in the left side, particularly along the ribs; general distressing uneasiness, making him toss about from side to side, cannot sleep from the pain in the left lumbar region, and anterior part of the thigh.

Nov. 24. The non-pulsating tumour has attained an enormous size, extending from the ribs to the crest of the ilium, and forwards to the median line, so that the whole left side of the abdomen is occupied by it; the pulsation formerly in the epigastrium is now entirely confined to a part at the *right* of the median line, and is greatly diminished in strength and extent.

On the 26th his countenance was expressive of despair, deadly pale, lips blanched; the afternoon of the day before he was suddenly seized with intolerable pain in the left groin, causing him to scream with agony, and jump out of bed. The pang continued about five minutes, there was then observed a feebly-pulsating tumour in the groin. One hour after the visit, he was

attacked with intense pain in the left lumbar region, after which he sunk, and died at two o'clock the same day.

Dissection.—Countenance perfectly placid. On opening the abdomen, the muscles and peritoneum, forming the anterior paries, were found in their natural state. The intestines healthy, as well as the liver, spleen, and pancreas. The serous membrane, covering the lumbar and iliac regions of the left side, was now seen pushed upwards and forwards by a considerable quantity of coagulated black blood, which had pushed the spleen and stomach forward and to the right side. The coagulum extended over the front of the spine, pushing the left kinney considerably forwards and towards the mesial line; the tissue of the left psoas and iliac muscles was infiltrated with coagulated black blood, which enveloped and pressed on the nerves of the lower extremity of that side; along the spine the coagulated blood was evidently the result of a more ancient effusion; it had become brown and fibrous, and was disposed in concentric layers, separable by a little force, but connected by numerous reddish fibres.

At the left side of the spine, a little above the kidney, was found the proper aneurismal sac, formed of a dense white cellular tissue, and having a cavity nearly spherical, and capable of containing a small orange. In this sac were two openings, one rather to the left side, through which the larger quantity of blood escaped under the peritoneum; the other communicating with the aorta, at its posterior portion, midway between the origins of the cœliac axis and inferior mesenteric arteries; the first, second, and third lumbar vertebræ were carious, and destroyed to a considerable extent; but the corresponding intervertebral cartilages were less injured, and their surfaces, though depressed, and, as it were, beaten in, were smooth to the touch.

I have placed these cases of aneurism of the abdominal aorta together, as they illustrate a termination of the disease, which, as far as I know of, has not been described in systematic works. In both we observe that tumours are formed, occupying the left

hypochondrium and lumbar region, and, in the last, occurring in the inguinal. These tumours are recognized during life, and do not proceed from an extension of the aneurismal sac, but from its rupture into the cellular membrane around the spine, as noticed by Mr. Harrison,* and the consequent extravasation of blood into the sub-peritoneal tissue. This effusion occurred in great quantity, and was prevented only by the serous membrane from making its way into the abdominal cavity. In both these cases also, symptoms indicative of this new lesion were observed long subsequent to those of the aneurismal disease—being pain in the left lumbar region, extending to the lower extremity, the formation and gradual increase of tumours occupying the left hypochondrium, lumbar inguinal, and iliac regions, and accompanied with symptoms similar to those of inflammation of the bowels, (this was particularly observable in the first case); these tumours are pulsating in some portion of their extent, and with their increase the pulsations of the original tumour are diminished; the patient sinks gradually with the symptoms of internal hæmorrhage. It is interesting to compare, in this respect, the different results of the openings of the aneurismal sac in the first case; the hæmorrhage which proceeded from the first opening through which the blood escaped under the peritoneum was gradual, and, accordingly, the symptoms were not those of the sudden loss of a great quantity of blood: as the effusion, in order to increase, had, in its progress, to separate the attachments of the peritoneum, the patient could, for a time, support the gradual subtraction of blood, but when the second opening took place into the pleural cavity, the pressure of the lung was insufficient to prevent a sudden and copious effusion, which was followed by the immediate death of the patient.

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* See Surgical Anatomy of the Arteries.

BIBLIOGRAPHIC NOTICES.

Observations on the Healthy and Diseased Properties of the Blood. By WILLIAM STEVENS, M. D. London, 1832, pp. 504, 8vo.

AT the present juncture, an epidemic of the most destructive character desolating these countries, and the public mind in a state of most intense excitement, occasioned by the trifling power possessed by physicians to arrest or even alleviate the disease, any alteration in doctrine connected with the great subject of alarm, becomes swollen to a degree of magnitude, and invested with a degree of importance to which it perhaps otherwise would never have arrived; and what is more injurious both to the public and science, it is in a great measure deprived of that calm and unprejudiced consideration to which it would otherwise be subjected, and which alone can determine its positive and real value.

About two years since, Dr. Stevens brought forward some views concerning the treatment of the fevers of hot climates, founded principally on the peculiar alteration of colour produced by most neutral salts on the venous blood. Considering, from the appearances of the blood of patients in African typhus or yellow fever, that the saline constituents of that vital fluid were absent, or at least diminished in quantity, he was led to the exhibition of the neutral salts in these fevers, and according to his statements, with the most extraordinary success. His writings on the subject led to very acrimonious communications from some of the physicians and surgeons in the West Indies, with regard both to the originality and to the advantage of Dr. Stevens' mode of treatment, which have been already laid before the profession in the periodicals of that time, to which we shall refer for a more copious exposition of the evidence adduced on either side.

Chemical investigation having proved the very interesting alterations that take place in the blood in cholera, viz. the diminution in quantity of the water and salts, the former observations of Dr. Stevens led him to propose the neutral salts as therapeutic agents in that formidable disease. This sugges-

tion was acted on by a number of practitioners, and not only were these substances introduced into the digestive organs, but in severe cases, large quantities in solution in water were injected into the nervous system. The results of this mode of proceeding we shall not now advert to, as the exposition of the merits of this treatment forms a portion of the work, the title of which stands at the head of these observations, and will therefore obtain examination in its proper place.

The book, which has induced us to make the few foregoing remarks on Dr. Stevens' labours, embraces rather an extensive field. Bearing the important title of "Observations on the healthy and diseased Properties of the Blood," it consists of a series of essays, viz:—1st. General Observations on the Blood. 2nd. On Animal Heat. 3rd. On Respiration. 4th. The Latent Power of Attraction. 5th. Vitality of the Blood. 6th. Modus Operandi of Agents on the living Body. 7th. General Observations on Fever. 8th. Copy of a Paper which was read to the College of Physicians in May, 1830. 9th. Observations and Correspondence relative to the Fever at Trinidad, in 1828. And 10th. On Cholera; together with an Appendix.

We never experienced so much satisfaction at the appearance of any work, as when we received the copy of the results of all Dr. Stevens' labours. At last, said we, "our desires have been fulfilled, that task, to the completion of which so many illustrious men have devoted their attention, has been accomplished, and by a Briton." The all-important question, "What do we know respecting the alterations of the blood in disease?" has been resolved, and pathologic science has attained, at last, a degree of perfection, which some years since we scarcely could have conceived possible.

And the author of this work, how we did prepare ourselves to admire him; when we reflected, what profound erudition and extensive acquaintance with the labours of contemporary writers he must have possessed, in order to collect the scattered materials for such an immense work; what accuracy in the minutiæ of chemical and physical research, patience in experiment, caution in reasoning, and immense power of intellect in generalizing the experimental results, so as to present to our view the influence of the various disorganizations of the blood in the production of disease. But we received the work, we read it, and all our pleasing anticipations vanished into thin air,

> "And like the baseless fabric of a vision,
> Left not a wreck behind."

Dr. Stevens' book is not what "Observations on the heal-

thy and diseased Properties of the Blood" ought to be; we shall now proceed in sad earnest to examine what it is.

The first portion of the work, "General Observations on the Blood," is one of importance, as in it Dr. Stevens states his peculiar views with regard to the constitution of that fluid, and the experiments by which they are supported. He first describes the course of the circulation, and the composition of the blood; in the latter of which he is rather loose in his expressions, giving the composition of albumen as being the ultimate composition of blood considered *en masse*, a point of view, in which every chemist knows, that a complex animal substance ought never be examined. He then passes to the phenomenon of coagulation.

The great object of Dr. Stevens, that for which the work has been composed, is to point out the importance of the salts, in the composition and properties of the blood. His practice in cholera and typhus fever is deduced from the opinion that in these diseases the salts are absent, and that by introducing the salts into the system, the blood will be restored to its physiological condition, and the disease removed. Consequently it is of paramount importance that the fundamental principles of the doctrine should be firmly established, and we shall now proceed to the evidence he adduces for that purpose:

"The fibrin, the albumen, &c., are naturally solid, and, with the exception of the colouring matter, the whole of the solid ingredients of the blood owe their fluidity, not to the presence of a free alkali, but, as I believe, to the circumstance of their being held in solution by a *saline fluid*."—p. 6.

A saline fluid, that is a solution of a salt, in chemical parlance; but of what salt? Dr. Stevens does not say; has he determined by experiment to which of the salts that it contains the blood owes that property? no; at least he does not give the experiments, and he says, that *he believes*. Before he called in the aid of the salts to hold in solution the animal principles of the blood, he should have determined, that they are insoluble in water, and soluble in solutions of the salts, in the proportions in which they exist in the blood. But is this the case? not at all; the albumen, in the state in which it exists in the serum is perfectly soluble in water, and neither coagulated albumen nor fibrine is dissolved in quantity, by dilute solutions of common salt, or of carbonate of soda, allowing even that the soda exists, as he considers it does, in combination with carbonic acid.

With regard to the arterialization of the blood during coagulation, he says:

"When we allow the blood to coagulate, and then, before the

commencement of the separation, make an incision into the clot, when it is just firm enough to enable us to cut it with a knife, we find that it is, at this period, all equally red; that is, it is all red, so long as the salt serum is still in immediate contact with the whole of the colouring matter. But when we allow the coagulum to remain undisturbed, and examine these two portions of the blood (after the separation is fairly effected), we find that every particle of the saline matter has combined with the serum, and now that the internal or central part of the crassamentum is no longer in contact with this saline fluid, the whole of the colouring matter is perfectly black, except a thin stratum on the surface, which possesses a rich scarlet or arterial appearance.

"There are two causes which appear to be concerned in the production of this scarlet colour on the surface of the clot. In the first place, the removal of the cause of the impurity, from the exposed surface, by the oxygen of the air; in the second, the circumstance of its being covered, and in contact with, a saline fluid: for, without the agency of this, neither the removal of the impurity, nor the addition of oxygen, can produce the arterial tint, or even redden the colour on the surface of the crassamentum."—p. 8.

In these two paragraphs there are two very important errors: 1st. When just after the coagulation is completed, we cut through the coagulum, "the whole of the colouring matter" is not "*perfectly black.*" It presents a very beautiful dark ground, punctuated with red; and secondly, the arterialization *can* take place without the clot being *covered, or in contact with a saline fluid.* To prove this we shall merely mention an experiment made by us a few days since: a coagulum of ox blood, weighing probably four or five pounds, was allowed to drain for more than twenty-four hours on a sieve; the surface had been perfectly arterialized; when no more serum drained from it, it was cut in two, and thus two dark venous surfaces exposed to the air, in six hours they had become nearly as vividly arterial as the surface which had been presented to the serum during coagulation. This experiment we cannot reconcile with the perfect passiveness of oxygen and the activity of the salts alone.

The following paragraph explains Dr. Stevens' views concerning the office of oxygen in respiration:

"It is, I believe, a common opinion, that the arterial colour of the blood is produced by the absorption of oxygen into this fluid; I shall afterwards, however, endeavour to prove that this is not only an error, but one that has been the cause of great mortality in the practice of medicine. When oxygen is brought into direct, or even into indirect, contact, with venous blood, it instantly reddens the colour. It is not, however, the absorption of oxygen which causes this change;

for it is not by addition that this gas produces its effect in brightening the blood, for scarlet is the natural colour of the vital current, and this it owes to another cause. I have ascertained, by numerous experiments, that all the acids blacken the blood, and my conviction is, that carbonic acid, and not carbon, is the cause of the dark colour in the venous circulation. Oxygen however possesses, as I shall afterwards prove, a powerful attraction* for carbonic acid; and when venous blood is exposed to the air, either in the lungs or out of the body, oxygen brightens its colour, *not by addition*, but by *attracting* or removing the carbonic acid from the venous blood, and this becomes bright, exactly in proportion as it loses that which had been the cause of its dark hue. In a high temperature the acid is rapidly removed by the oxygen; when this is effected, the blood is purified, and instantly recovers its natural or scarlet appearance. Oxygen, however, is essential to life; for, without this, the heavy deleterious gas, which is the cause of the impurity in the venous circulation, would not be removed in the pulmonary organs. But the scarlet colour exists in the blood independent of oxygen, or, at all events, oxygen of itself cannot produce either the red or the arterial appearance, for when we cover the crassamentum, when it first coagulates, with a layer of distilled water, or any other fluid which does not contain saline matter, the acid may be removed by the oxygen or absorbed by the water, but the colour becomes darker than it had been before. On the other hand, when we immerse the black and saltless crassamentum in any clear *saline* fluid, the colour instantly changes from dark venous to a bright arterial; and when the fluid which we use is sufficiently impregnated with saline matter, this change is produced *when we make the experiment, as I have frequently done, even in an atmosphere of carbonic acid.*—p. 9.

To this there are two tangible consequences, if Dr. Stevens be correct: 1st. Provided the carbonic acid be drawn out, it is no matter whether oxygen be present or not; but blood when coagulating in vacuo, gives out as much carbonic acid as in respiration; therefore blood that had coagulated in vacuo should be arterialized on the surface. This is not the case. But on the contrary, blood that had coagulated in vacuo, and which was venous coloured, became arterialized after admitting atmospheric air to the receiver. 2nd. If the oxygen merely *lifts the heavy carbonic acid* out of the last bronchial ramifications, a gas of greater endosmosmic power should remove the carbonic acid more rapidly, and should *à fortiori*, produce arterialization. This is not the case. Nitrous oxide is absorbed rapidly by the blood when inspired, and being carried to the brain, produces

* This, of course, is not the effect of any chemical attraction; what it is will be considered hereafter.

its usual stimulating effects; but the arterial blood becomes dark coloured, and if the inspiration of the intoxicating air be continued too long, coma and death will render sufficiently evident, that the oxygen of the air does something more than lift out the carbonic acid.

Dr. Stevens anticipates an objection to his doctrine, viz: that if the arterial colour depends on the salts, why is the venous blood, which contains as much salts, of a dark colour. He gets rid of this objection by asserting that the venous blood does *not* contain as large a quantity of the salts as the arterial. Of course he proves this by analysis: oh, no; well some eminent chemist has done so: not at all; but many many eminent chemists have proved the contrary. Thus, Denis (*Recherches experimentales sur le sang humain,*) page 71, says, "J'ai analysé "comparativement le sang arteriel et le sang veineux de plu- "sieurs sujets. Les differences que jai remarqueés entre le "sang de ces deux ordres, sont si faible qu'il est permis de les "negliger dans des experiences du genre de celles que jai "entreprises." And Thenard, (Traité de Chimie, tom. IV. 552,) says, "Ce qu'il y a de certain, c'est, qu'il (le sang arteriel) se "comporte avec tous les reactifs de meme que le sang veineux, "et que l'analyze n'y decuvre que les memes corps, quoique son "action sur l'economie animale soit tout autre."

But Dr. Stevens says, that when he gets entangled in difficulties, he does not care for the results of actual experiments, (p. 20), but he rests his belief on common sense. We respect Dr. Stevens very much, but in a matter of chemical research, we would prefer relying on the actual experiments of the most eminent chemists, than on the common or uncommon sense either, of Dr. Stevens.

Our limits do not allow us to remark at greater length on this portion of the work; we have shown the egregious fallacy of the principles upon which the theory of Dr. Stevens is founded, and shall therefore pass to the remaining topics.

The 2nd Memoir, on Animal Heat, is occupied with the detailed proofs that the de-arterialization of the blood is affected in the systemic capillaries. Concerning this we shall not remark. He appears to us rather to underrate the influence of the nervous system on sanguification, and we have frequently read expositions of that doctrine, which appeared to us more lucid and more perfect than that under consideration. Dr. Stevens, however, could not let a subject so essentially chemical, be concluded, without making some original additions to that science, to which he has already contributed so much. He says,

"When an alkaline oxide is converted into an alkaline carbonate, its capacity for caloric is also increased. It is also true, that when

we apply heat to a carbonate, so as to expel the acid, the alkali recovers its original form, and its capacity for caloric is again diminished. When we dissolve, for example, the carbonate of soda in water, heat is absorbed by the salt, and the fluid becomes cold; but when we dissolve an alkaline oxide, heat is immediately evolved, and the temperature of the water rises, during the solution, several degrees higher than it had been before."—p. 41.

We shall merely remark,—1st, that "when an oxide is converted into an alkaline carbonate, its capacity for caloric" *is not* increased; 2nd, that we cannot expel carbonic acid *by heat* from an alkaline carbonate; and 3rd, that when we dissolve carbonate of soda in water, the fluid does not become cold, except we use the crystallized salt, and the cold is then produced by the liquefaction of the water of crystallization; while, if we use dry carbonate of soda, heat is produced during its solution. Dr. Stevens' theories are, generally speaking, very neat; we regret exceedingly that they are irreconcileable with fact.

In the Essay on Respiration, Dr. Stevens brings forward his most important views with regard to the nature of this process. We are sorry that we can only afford room for a summary of his observations. The following are his words:

"We have seen that the blood in the extreme circulation is converted from arterial to venous, partly by the loss or rather by the change of form in the oxygen which it contains, and partly by the addition of carbonic acid. When this acidified or impure fluid arrives in the lungs, the first effect of the oxygen is to attract the acid from the blood which is exposed to its action; and when this is effected, the blood becomes florid from having lost that which had been the cause of its dark colour, for it is now, and exactly in proportion to the removal of this impure gas, that the saline matter, when no longer incommoded by the presence of a free acid, acts on the colouring matter with all the force of the neutral salts, and gives to the vital fluid in the lungs the same bright, arterial colour which we can produce even in the darkest dead blood out of the body, by adding to it a small quantity of the muriate or the carbonate of soda, the muriate of potass, or, in fact, any one of the other neutral salts that form an essential part of the blood in its healthy state. Or, the same thing may be stated thus:—Scarlet is the natural colour of the blood, such as is found in the arterial system, and this colour is produced by the action of the saline ingredients on the colouring matter. This arterial blood, however, is blackened in the extreme textures by the addition of a free and insoluble acid; but when this dark or acidified blood is exposed to the air in the lungs, the oxygen instantly removes the acid from the circulation, and then the blood in these organs immediately assumes that scarlet or arterial tint which is, in reality, its natural colour."—p. 53.

Here the venous blood owes its dark colour to carbonic acid. A few pages before, as we have shown, he accounted for the dark colour of venous blood by its containing less salts than the arterial fluid. What made Dr. Stevens change his opinion so completely in such a short space? probably he considers that "both are best."

The following is Dr. Stevens' account of the power which operates the separation of the carbonic acid in the lungs:

"Carbonic acid, which was originally described by Dr. Black as *fixed* air, has been considered lately as a *volatile* acid. The truth is, however, that this heavy gas possesses no power inherent in itself which enables it to rise in the atmosphere under a heavy pressure, and in direct opposition to the usual law of gravity. But this and other heavy gases possess the property of being acted on and lifted up, even by others that are much lighter than themselves. And when we bring a lighter to bear on a heavier gas, for which it possesses an attraction, the membrane which is between them, cannot, in that case, prevent the lightest gas from attracting even carbonic acid, which is by far the heaviest of them all. Such is the fact; but as neither the laws of chemistry, electricity, gravity, caloric, nor any other agent with which we are acquainted will enable us to explain phenomena, we may infer, at least for the moment, that the effect is produced by a latent power of attraction, which enbles certain agents to act with force upon each other, in some cases, even at a distance, and that, too, without producing any chemical change in any of their properties; for often there is no new chemical result, but merely a mechanical mixture of the different agents."—p. 49.

"In common chemical language oxygen is said to possess an affinity for certain bodies; but, to speak more correctly, when a fixed substance, a metal, for example, attracts oxygen, and brings it to itself, the metal is then the *attracting*, and the oxygen is, in that case, the *attracted agent*. Or, when two gases are placed on opposite sides of a membrane, and the one removes the other, and brings it to itself, even through a dense texture, we may then consider the removing gas as the cause of the attraction, for it possesses a greater affinity for the other gas than the attracted gas possesses for it; and, therefore, though, in the end, there may be, in some cases, a mechanical mixture of the different gases, yet, in the first part of the process, it is the attracting gas which brings the other to itself, and, therefore, the fixed or removing gas ought to be considered, in this instance, as the attracting agent."—p. 51.

We can perceive here, that he means to describe the fact of gaseous endosmose; but the description of that power is mixed up with so much extraordinary misconceptions, that to a person not previously acquainted with the subject, we doubt whether he would be perfectly intelligible. Indeed, although he accounts for the exhalation of the carbonic acid, by the action of

this power, to which he afterwards awards the grandiloquent appellation of *the latent power of attraction;* in such perfect ignorance of the principle of endosmose does he rejoice, that he says, "the exhalation of the carbonic acid takes place first, and *then* the absorption of the oxygen;" and to account for the latter portion of the process, he "enables the saline matter of the purified blood to attract a part of the atmospheric air into the circulation;" the muriate of soda realizing the story of the servant that could turn his hand to any thing, and do all equally well.

But the oxygen, although absorbed by the salt, exists in a perfectly uncombined state, it even exists in globules. Dr. Stevens enters at great length into a series of experimental proofs of this fact, viz: that the serum of arterial blood contains floating through it, an immense quantity of globules of air. We shall refer to the work for the detail, and, therefore, as we do not relate the experiments, we shall not make any remark on either the mode in which they were made, or to the fallacies to which they are liable. It is evidently a subject, which, as most microscopic observations, would require to have been carefully examined by numerous inquirers previous to being used as the basis for theoretic deduction.

There are some circumstances, however, which we cannot allow to pass unnoticed. Dr. Stevens says:

"Neither is it the fact, that, in hot climates, the air is rarified to such a degree as to diminish the power of the oxygen in purifying the blood. Nature is much more perfect in all her works than such an idea would lead us to infer: for the rarefaction which might otherwise be produced by the high heat, is prevented by the heavy atmospheric pressure, which is so uniform and so great within the tropics, particularly in those low situations near to the level of the sea, where the temperature of the air is, of course, much higher than in those situations that are more elevated."—p. 59.

This sentence exhibits a happy disregard for physics, which we have seldom seen in modern works. It is probably one of the instances, in which Dr. Stevens prefers his own "common sense" to the "experiments" of others. Now, it happens that the air *is very much* rarefied in the tropics in consequence both of the increased temperature and of the diminished force of gravitation, and the height of the mercury in the barometer differs but trivially from that of our climate, and is only remarkable for its limited range of variation:

"A good deal has been said about the difficulty of breathing upon high mountains; I believe, however, this difficulty, if it does exist, arises partly from the increased exercise, and, perhaps, in some de-

gree from imagination, in consequence of a preconceived theory. I have been high enough on the Andes to have felt this difficulty had it really existed; but when I had ascended to the top of a very high mountain, after a very little rest, I could breathe as freely as I had done in the morning, in a plain nearly on a level with the ocean. When we ascend, the cold increases exactly in proportion to the diminution of the atmospheric pressure; and the density in the air, produced by the cold, prevents that rarefaction in the atmosphere and difficulty of breathing, which, except for this circumstance, would certainly occur. But, from the increased density produced by the cold in the higher atmosphere, it is probable that the air, even on the top of the highest mountain, contains nearly as much oxygen in the same volume, as that which exists on the surface of the sea."—p. 61.

He says, "the cold increases exactly as the atmospheric pressure diminishes, and the density produced by the cold prevents the rarefaction which the diminished pressure tends to produce. Dr. Stevens must have a most extraordinary idea of the laws followed by gases in their contraction of volume by cold, and expansion by removal of pressure. Does the cold produced during the exhaustion of a receiver, counteract the effect of diminished pressure, and prevent the animal included in it, from *feeling any inconvenience* from the operation? This is another case of "Dr. Stevens' common sense, *versus* experiment:" but argument is unnecessary. Who has not read of Humboldt's crossing Chimborazo, and Saussure's ascent of Mont Blanc. Humboldt and Saussure on the one hand, and Dr. Stevens on the other: any comparison would be an insult to our readers. Again:

"In cold weather we observe that there is a quantity of moisture in the air, which is evolved from the lungs. I believe, however, that very little of this moisture is derived from the blood. It is a fact that atmospheric air parts with its moisture exactly in proportion to its heat. The cold air which is taken into the lungs is soon heated to the temperature of 98° or 100°, and the air which is most used and most heated rises to the surface. This, in expiration, is forced out from the chest, and when this heated air comes in contact with the external cold atmosphere, the moisture which it contains is immediately condensed into vapour by the cold; but the greater part of this is derived from the air which has been heated in the lungs, and not from the blood. This appearance is not observed in warm weather or in hot climates, merely because the atmosphere is not cold enough to condense the moisture in the air which has been heated in the pulmonary organs."—p. 61.

We shall not remark on this paragraph; we would not wish to lose that serenity of mind, which every one pretend-

ing to *l'esprit philosophique*, should, at least, endeavour to retain.

We shall not delay on the portion of Dr. Stevens' work devoted to the developement of the history of the latent power of attraction. To those who have read the memoir of Mitchell, it presents nothing new, and those who have not, would decidedly gain more information from it, than from the labours of Dr. Stevens on the same subject. We shall, however, direct the attention of our readers to a circumstance of immense importance, as it concerns the honour, and even the honesty, of one of the brightest ornaments of American science, we mean Dr. Mitchell of Philadelphia, who is accused by Dr. Stevens of having taken up the examination of the subject of gaseous endosmose, after having learned a number of original experiments that Dr. Stevens had previously made; and knowing that the latter gentleman could not publish his results for some time, brought out a memoir made up of what Dr. Stevens had done, and keeping total silence as to Dr. Stevens, gained immense credit for that important discovery.

In justice to Dr. Stevens we shall give his own account of the transaction:

"The experiments which prove the action of gases on each other, have lately excited an intense degree of interest amongst our professional brethren in the United States. I say, lately, for it was only in the month of November, 1830, that two papers appeared there, for the first time, on this subject:—the one is on the endosmose and exosmose of gases, said to be written by a Dr. Faust; the other is a paper on the penetrativeness of fluids, by Dr. Mitchell, lecturer on medical chemistry, in the Philadelphia Medical Institute.* Dr. Faust's paper is dated on the 23rd of August, and Dr. Mitchell's, on the 18th of September, 1830. But their first experiment appears to have been made on the 21st of July; that is, a short time after I had mentioned the leading and by far the most important fact of the whole, not merely to one, but to several individuals in that country.

"Dr. Mitchell, who is the most prominent of the two writers, states that he got the first hint on this subject from a balloon, as it appears from his own statement, in 1829. He had afterwards, it seems, read an account of Mr. Graham's experiments; but notwithstanding the previous hint from the balloon, the strong facts stated in Mr. Graham's paper seem to have made no impresion on Dr. Mitchell, for he says, &c."

"We may infer from this, that it was neither the balloon in

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* See the 'American Journal of the Medical Sciences,' for November, 1830.

1829, nor Mr. Graham's paper, but *a reflected light*, which had induced Dr. Mitchell to commence his labours so suddenly on the penetrativeness of gases. And this is probably true; for I had, previously to the commencement of his experiments, stated to an intimate friend of Dr. Mitchell's the leading and important fact, namely, the powerful attraction which oxygen possesses for carbonic acid, as well as the conclusions which I had drawn from this fact, relative to the agency of oxygen in the purification of the blood, by attracting the carbonic acid in the lungs, through the medium of the intervening membrane. The conversation I had with this gentleman was in Philadelphia, on or about the 15th July, 1830; and when I add that the gentleman to whom I had mentioned this important fact was afterwards, to my certain knowledge, present with Dr. Mitchell while he was performing his experiments on this subject, the reader may then form any opinion he may think proper relative to the source of the reflected light which had induced the Philadelphia writers so suddenly to commence their experiments to ascertain whether gases could or could not attract each other, even through the medium of dense membranes.

"Dr. Mitchell does not inform us at what particular period he commenced his labours on this subject; but I have good grounds for the belief that his experiments were not commenced until immediately after the above conversation. At least, a friend of his, who is better acquainted with what is going on in the literary world than, perhaps, any other individual in that country, and to whom I had, in July, mentioned the result of my own experiments, refused at that time to admit the possibility of oxygen attracting carbonic acid, either in the lungs or anywhere else. He argued, as others had done before, that as the carbon in the carbonic acid had already combined with as much oxygen as it was capable of uniting with, there could not be any further chemical union betwixt these two bodies, and, of course, no further effect between them. In answer, I stated to this gentleman, as I had done to others, that the change was not the effect of any chemical affinity, but, probably, produced by the agency of a species of attraction, with which, as yet, we were but little acquainted. This conversation, as already stated, occurred in Philadelphia, about the middle of July, 1830; but on my return from Quebec, in the following November, I found that the effect of oxygen in removing carbonic acid, was now not only admitted by the same gentleman, but that the whole had already been published in Philadelphia, as an American discovery, with this difference, that they had added some additional experiments of their own, and had described the phenomena in a sort of language peculiar to themselves."

This is a serious accusation, but we should hope that it may be satisfactorily explained. If Dr. Mitchell did commit the intellectual larceny, he has decidedly brought forward the subject in a much more interesting point of view, and investigated

it more accurately and extensively than has fallen to the lot of the rightful owner to effect.

We have transgressed so far our intended limits, that we must defer the examination of the more medical portion of Dr. Stevens' work to our next number; we do so, however, in order that we may be enabled to devote to it attention and space corresponding to the importance and the difficulty of the subject of which Dr. Stevens treats.

In some parts of the foregoing critique, we have been more honest in our observations than, probably, may be quite pleasing to Dr. Stevens. Before parting from him, however, we would wish him to examine coldly and dispassionately the circumstances of the case; and he must candidly confess, that, had we not, previous to entering upon the discussion as to the therapeutic value of the treatment that he proposed, proved the total incorrectness of the theoretic data upon which that treatment is founded, we would have been failing in our duty as well to science as to humanity.

Lithotomy and Lithotrity compared, being an analytical Examination of the present Methods of treating Stone in the Bladder, &c. By THOMAS KING, M.D., M.R.C.S.L. London, 1832, pp. 320, with plates.

NOTWITHSTANDING the comparative success that modern surgeons have attained to, in the results of the operation of lithotomy, a success that had disarmed it of half its terrors, and robbed it of all that fearful importance that used to be attached to it both by the profession and the public: we have never for a moment lost sight of the immense advantage that might result from the substitution of any mode of treatment that would enable us to dispense with it altogether. Although not practically adopted as yet in Ireland, for which good and sufficient reasons might, if necessary, be advanced, the operation of lithotrity, from the moment of its discovery, was hailed as a great and useful improvement in the art of surgery, and every encouragement afforded for proving its superiority. Some years since, M. Pacchioli was not only permitted, but invited to explain the principles of the operation, and the mode of performing it, to a large professional audience, both practitioners and students, assembled in the Theatre of the Royal College of Surgeons; and within this year, our countryman delivered a lecture in the same place, and on the same subject, which will

be long remembered with delight by all who enjoyed the pleasure and advantage of hearing him. We have heard that some of our hitherto most successful operators decline at present cutting for the stone in all cases where the pecuniary circumstances of their patients permit of their resorting to another country; and, whether our information be correct or not, we should be disposed to pass our highest encomiums on every surgeon adopting so praiseworthy a resolution. It will be seen, now, that we are disposed to favour the lithotritist—that we look upon his operation as a great and manifest improvement, and we approach the examination of our author's book with the warmest wishes for the success of any publication, the object of which is to disseminate information on so valuable a subject.

The first twenty-six pages of Dr. King's book are devoted to an exposition of the physiological qualities of the urine, which, however correct, might as well have been omitted altogether, as it throws no light whatever on the subject under discussion: the rest may be aptly divided into three sections, one explanatory of the anatomy of the urinary organs; the second deducing from the former the great and manifold dangers of lithotomy; the third inculcating the high utility of endeavouring to break down the stone. Of these three great divisions of his subject we would say, that he had treated the first in the best style; his descriptions are, evidently, taken from actual dissection; his observations, particularly his measurements of different parts, are quite original, and his inferences generally correct, except that he magnifies the dangers of lithotomy, perhaps, somewhat beyond reality. As a specimen of our author's manner we subjoin the following extract, having selected it because it contains one of those original remarks above alluded to.

"The anterior region of the bladder corresponds to the symphysis pubis; to the pubic ligament, from which it is separated by its own anterior ligament and cellular tissue; and in a small extent, to the triangular ligament of the urethra. Above the symphysis, this region corresponds, opposite the linea alba, to the fascia transversalis of Sir A. Cooper; but whenever the bladder rises fairly an inch and a half above the pubis it is in contact with the peritoneum, lining the wall of the abdomen, in addition to its own peritoneal covering. In other words, the shining surface of the peritoneal covering of the bladder is in contact with the same surface of the peritoneum lining the muscles of the abdomen; so that, an instrument, to penetrate this part of the organ, must traverse the peritoneum twice."—p. 30.

To the discovery of this anatomical disposition, Dr. King lays claim, and insists on its importance; because "it explains

" at once the error committed by lithotomists, who in laying " open the bladder above the pubis, to their great consternation " and surprize, have found their fingers or instruments in the " cavity of the abdomen." This would be a grievous error, no doubt, and one calculated to strike any one with dismay who witnessed it, not to speak of the unfortunate operator himself; but we doubt very much whether it would be an accident likely to happen in modern times.

The urethra is described pretty nearly as it has been by other anatomists, except that Dr. King considers the prostate gland as forming a part of the bladder, and the urethra as commencing from the anterior termination of the gland, and not as passing through it from that undefined spot which we used to call the neck of the bladder. " It (namely, the pros- " tate gland) forms, in reality, a portion of the bladder, and it " is from being placed as a kind of soldering tissue to join this " reservoir to the urethra that is has been considered a compo- " nent part of both." The remarks on the straight sound, and its mode of introduction, together with the comparative merits of the straight and curved instruments in exploring the bladder, are plain and satisfactory.

But the portions of the book which bear most directly on the subject under discussion, are those which contain the anatomy of those regions by which the bladder may be reached in operation, and an analysis of the operations of lithotomy; and here we suspect our author of a little prejudice in favour of the method he advocates (lithotrity,) which has quite sufficient merits of its own without leaning on partial support. He states, that an average of one in every seven or eight of those cut, dies, and that, in almost all these cases, death is either produced by the force used in extraction, or by too extensive an incision in the prostate. Now, it is not too much to say that this proportion of mortality is overrated, at least if we judge by the results of the operations performed in this city during the last twenty years, and the mortality was not occasioned by the causes alluded to, neither were there large calculi extracted from the patients who died. During this period we recollect cases wherein several large calculi were extracted, many of which we could refer to in a moment, without a single unfortunate result; and therefore we think the following extract rather too decisive:

" The surgeon is in this dilemma,—he must either use force, or make a long incision; the former lacerates the prostate and cellular tissue, bruises the bladder, and stretches its membranes, and shocks the nervous system; the latter prepares the way for infiltration of urine: both are fatal nearly to the same degree."—p. 105.

Without at all detracting from the merits of lithotrity, all

we can say is, that if its superiority is to be established by Dr. King's arguments, it never would supersede lithotomy in Dublin. Oh, no! let it be told to the world that it is better to have a bloodless operation—one in which there is no terror, no cutting, no moral shock inflicted on the system: let us understand that the great, the paramount value of the new method over the old is, that we are thus enabled to avoid real dangers, not chances of laceration or too extensive cutting. Let us, in a word, understand that the adoption of the one operation promises the preservation of more lives than the other, and we embrace it with ardour; but it never shall be said that lithotomy is so mortal an operation as it has been depicted by our friend, whilst we know that, in this city alone, there have been two surgeons who lost but one patient each out of an aggregate of 57 stone cases. If we look into the registers of the Dublin hospitals, the mortality will be seen to be far below the average above stated, and very many of those who died, perished from causes not referrible to the *mode* in which the operation was performed. Lithotomy, therefore, is a good operation, in which the patient incurs as little risk as from any other capital operation whatever; and lithotrity is better, because it diminishes that risk, but certainly does not remove it altogether.

The most important part of our author's work is where he treats of the operation which it is his object to recommend, and here we are inclined to suspect he must labour under considerable difficulty, for it would be morally impossible for any man to explain half the circumstances necessary to be understood, without exhibiting the instruments to his pupil, without having a subject before him, in order to illustrate their application; nay, without making such pupil take the machinery in his own hands, and familiarize himself with them. We attach no blame to Dr. King, therefore, when we say that no man perfectly uninitiated could inform himself by the aid of this publication alone: at the same time, if a man has attended lectures on the subject, and possesses the instruments, and is labouring to attain that degree of dexterity which is necessary for a lithotritist to possess, there can be no doubt but he will here receive the greatest assistance, and what is better, when he comes to practise on the living, he will here be reminded of every attention and every precaution that can tend to insure success. But we do not think that lithotrity will ever be much practised in Ireland. In the first place, calculus in the bladder is not a disease very prevalent here, and it is to be doubted, whether if every case that occurs was treated by the same practitioner, he could earn a comfortable livelihood in the end. Secondly, amongst these cases there are confessedly not a few, to which the operation would be

inapplicable. Lastly, we do not think that any man can become a lithotritist, who does not devote himself to this one pursuit, and to it only, and we have never observed this kind of division of professional labour to be very prosperous here. Unfortunately this book is not calculated to excite any of us to the pursuit, for there are so many discouraging circumstances honestly and fairly stated, that it would require months of energetic study to surmount them. For instance, even the position of the patient is not agreed upon by all lithotritists, nor whether he should be secured during the operation, or left free. Again, "it is according to the volume, chemical composition and form "of the stone, that the process for destroying it is selected; and "we cannot repeat it too often how highly essential it is to the suc- "cess of the operation, that these points of diagnosis be correctly "ascertained." There is, moreover, a possibility of the instrument getting out of order whilst in the bladder, in such wise that it cannot be withdrawn, or some part of it may break. "The ope- "rator," says Dr. King, "ought always to be ready to perform "lithotomy if required, at a moment's warning, and should never "be without the necessary instruments." This last is a most fearful consideration, with reference to a surgeon's reputation, and one that cannot be guarded against. We have known knives and bistourys to have given way and broken in the most ordinary operations; we have seen a needle break in a patient's eye during an operation for cataract: and what would a patient say to his surgeon on being told that, "at a moment's warning," he must submit to be tied up and undergo that very operation which he had been taught to dread, and to escape from which he had already endured so much.

Having now expressed our opinions pretty fully as to the value of lithotrity as an operation, it is time to state some short notice of the manner in which Dr. King has executed his task, and here we can indulge in terms of the warmest approbation. Nothing can be more clear, more concise, or more explicit than the directions given, and the explanations why one instrument should be preferred to another, or one mode of operating more suitable to its own particular case. If it be true, as has been already remarked, that any person perfectly uninformed, would find it difficult, if not impossible, to learn the art of lithotrity from these pages alone, the fault is in the subject, not in the manner it has been treated; but to any surgeon already possessing some acquaintance with the instruments, and wishing to become an adept in their manipulation—in short, wishing to qualify himself for this particular branch of his art, we conceive them capable of affording the most valuable assistance; and, indeed, every professional man wishing to keep pace with the

progress of science, and become acquainted with the improvements of his own times, should give to this little work of Dr. King's, an attentive and careful perusal.

Die Heilkräfte des Wasserfenchelsamens. Von Dr. Karl Wenzel. *The Virtues of Water-hemlock Seed.* By Dr. Charles Wenzel, Erlangen, 1828, pp. 136, 8vo.

The *Phellandrium aquaticum*,* or Water-hemlock, is an umbelliferous plant, which, as the name implies, grows in rivers, ditches, and ponds. It is indigenous to this country, but grows more plentifully in many parts of Germany, where, though not much in use, it has long been known as a simple: indeed, it has been the subject of no less than six monographs before the appearance of that at present under consideration.

The author states that he has laid it down as a maxim, to try new or unusual remedies only where those already in common use proved unsuccessful; and that he thinks it his duty to recommend the article in question as one that will be found a valuable addition to the Materia Medica. We shall not dwell upon this description of the plant and its seeds, which are the part used, thinking it better to refer our readers to a good Flora or Systema Plantarum; but shall dismiss this part of the subject with stating, that the proper time to gather the seeds is in August, and that there is need of caution that they be not confounded with those of the *Sium latifolium*, *Sium angustifolium*, or *Cicuta virosa*, which are also aquatic plants, and are in seed much about the same time.

The seeds contain a good deal of volatile oil, together with some mucilaginous, resinous, and extractive matters. With respect to their medical properties, Dr. Wenzel has found them to be mildly narcotic, anodyne, diuretic, and carminative. They are best administered in powder, with sugar, in doses of from one to two scruples, four or five times a day. Where the patient has an aversion to powders, they may be given in form of an electuary. The infusion is less efficacious, but is sometimes the only form that will be tolerated. It may be prepared by infusing an ounce of the seeds in a pint of boiling water, and

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* It has been reduced by Lamarck, Decandolle, Schultes, and others, to the genus Œnanthe, under the name of Œnanthe Phellandrium; and Sir James Edward Smith has adopted this arrangement in his "English Flora."

this quantity may be taken in the course of the day, alone or with milk.

The diseases in which he found them efficacious were chronic bronchitis, hooping cough, and psoas abscess. He also observed them to be useful in the treatment of obstinate ulcers. We shall now consider his remarks on each in turn.

In chronic bronchitis the seeds are of great service, inasmuch as besides their gentle narcotic and diuretic powers, they improve the quality of the secretion, whether mucous or purulent, and ultimately put a stop to it altogether, and restore the patient to health. They are at the same time very nutritious, while yet they do not affect the digestive organs. They may be occasionally combined with other medicines, especially digitalis. When there are any inflammatory symptoms present, it is not advisable to employ them, as they are rather heating, from the quantity of volatile oil they contain. In tubercular phthisis, though of course unable to work a cure, they are very useful as a palliative; and, when given in gruel or barley-water, constitute an excellent article of diet. The chapter closes with twenty-three cases, some of which are detailed at great length.

In the third chapter, we have an account of two very bad cases of psoas abscess, in which the patients were both completely restored to health by the use of the seeds. In one the abscess was opened with the lancet, and the patient was convalescent in a month after the operation. Towards the end of the time, she got bark along with the seeds. In the other, the patient would not suffer the abscess to be opened, and at last it burst of itself: notwithstanding the great suppuration and hectic, she was fully cured in about five weeks.

The fourth chapter contains five cases, in which obstinate ulcers on the extremities were treated by the phellandrium seeds, administered internally, and an infusion of the same used as a lotion. There was but one case in which they did not succeed, and that was a hopeless case from the commencement, as the patient was an old woman in the extreme of poverty, filth, and wretchedness.

The fifth chapter gives an account of the author's trials of the seeds in hooping cough; in which the results were very favourable. He never found the least benefit from the use of the extract of lettuce.

The subject of the concluding chapter is the anthelmintic powers of croton oil. Dr. Wenzel states, that he is convinced from experience, that it deserves to be ranked among the most valuable medicines of that class. It is equally successful against the lumbricus and the tænia; and when the patient (as often happens with children) obstinately refuses to take any medicine,

a few drops of the oil, rubbed on the abdomen, will often produce the desired effect.

A Practical Treatise on Uterine Hemorrhage, in Connexion with Pregnancy and Parturition. By JOHN T. INGLEBY, M.R.C.S., one of the Surgeons of the General Dispensary, Surgeon to the Magdalen Asylum, and Lecturer on Midwifery at the School of Medicine in Birmingham.

> "Sumite materiam vestris, qui scribitis, æquam
> Viribus; et versate diu, quid ferre recusent,
> Quid valeant humeri. Cui lecta potenter erit res,
> Nec facundia deseret hunc, nec lucidus ordo.—HORAT.

It is a curious fact, that there should be no distinct treatise in the English language, embracing the subject of uterine hemorrhage in all its branches. To supply this deficiency appears the object of the present work. The author claims no merit for originality, but expresses himself as desirous for the inculcation of *sound* principles, and the establishment of *correct* practice. He objects to the arrangements of preceding authors, and proposes to bring the subject forward in "a distinct and definite form, and a style at once plain and familiar." From this we were naturally led to expect some decided improvement in the arrangement and style adopted by himself, but must confess ourselves disappointed. Those which he substitutes are anything but felicitous; the order and primary divisions of his subject are irregular and disjointed; whilst in his details, with considerable repetition, there is a want of perspicuity, often almost amounting to contradiction, and leaving the impression on the reader's mind, that the author was himself uncertain as to the conclusions he would arrive at:

> "Inceptis gravibus plerumque et magna professis
> * * * * * * * *
> * * * * * * amphora cœpit
> Institui: currente rota, cur urceus exit?"

After some pertinent remarks on the mischiefs arising from self-constituted priests of Lucina being permitted to exercise the art, perfectly without control, and certain observations upon the importance of the subject of uterine hæmorrhage generally, the treatise may be said to open where the generality of treatises would terminate, with a chapter upon the retirement

of the practitioner after delivery. However inappropriate this commencement may be, the rules inculcated are sound, and demand attention. No plea can with justice be admitted as an excuse for the precipitate departure of the attendant, immediately after the expulsion of the placenta, as hemorrhage may occur on the termination of the most favourable labour. It is but too truly remarked, that the practice of hurrying away from patients (thus preferring our own time, or gain, to our patient's safety) is, generally speaking, confined to the poor. And why is it so? because either in certain districts there are no accoucheurs whose duty it is to attend the poor, or where such are to to be found, it is but too commonly the case to appoint men to to the charge of lying-in charities, whose time is so occupied with private business, that not possessing the attribute of ubiquity, they must either neglect the rich or the poor patient. The latter of course falls a sacrifice. We should remain with our patient at least an hour or an hour and a half after delivery, and if there had been flooding after a former labour, at least four or six hours afterwards.

Speaking of pressure, with a view to checking hemorrhage, Dr. Ingleby recommends it particularly where there is a tendency to a renewal of this; but why he should restrict its use to three or four hours it is difficult to say; surely there can be no reason for removing it as long as there is a chance of its being useful, and hemorrhage occasionally occurs after a much longer interval. The advantages to be derived from pressure* on the abdomen, both during and after the expulsion of the child and afterbirth, as well as from the application of the bandage, are very properly dwelt upon, particularly the checking hemorrhage, and favouring the discharge of the secundines, by retaining the uterus in the central line, and preventing it, now unsupported by the integuments, from overhanging the pubes. To this might have been added its directly exciting the uterus to contraction, and when contracted preventing its becoming relaxed and flaccid. Our author further recommends its use on

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* We cannot repress the astonishment we felt, at reading a paper on the management of the placenta, in the last (July) number of this Journal, wherein the writer treats of this practice as a modern improvement, and appears to ascribe the merit of its introduction to his master. Why—this, as well as whatever other commendable practice his paper contains, was insisted upon by the ablest accoucheurs before either master or pupil were in existence. How the treatises of Drs. Osborne, White, and Joseph Clarke on this important subject, could have been unknown to any midwifery practitioner we cannot conceive. There can at least be no excuse for his being unacquainted with the latter gentleman's valuable report of the Dublin Lying-in Hospital, which is in the hands of every midwifery pupil. Here the practice alluded to is most warmly recommended, and much merit ascribed to the preceding authors for enforcing it.

the accession of labour, and its being so adjusted as to maintain in its several stages a pressure corresponding to the uterus in its progressive evacuations. He admits that interposing folded napkins between the bandage and the uterus, by way of compress, answers very well in ordinary cases, but that it does not exert sufficient pressure to restrain active hemorrhage. Now we with confidence submit, that there is no degree of pressure, compatible with the safety of our patient, that may not in this manner be produced. Speaking of after-pains it is stated, these sometimes occasion febrile disturbance, the uterus becoming large and highly sensible to the touch: and when attended with a defective flow of the lochia, they may be considered as denoting a congested or inflamed state of the large uterine veins.

It is remarked, that if the bowels have been properly attended to in the last weeks of pregnancy, and on labour ensuing, the early employment of purgatives after delivery may be dispensed with. This is to a certain extent correct, but we must enter our decided protest against the strange criterion laid down with regard to the administration of purgatives generally, namely, the condition of the breasts. Our author's words are: "When the breasts are flaccid there is no occasion for the bowels being acted upon." Now, were it our sole object after delivery to ensure a proper secretion of milk, whilst we avoided inflammation of the breasts, or milk fever, even this rule ought to be received with restrictions; but when we come to consider, to how many other diseased states is the lying-in woman liable; to prevent or cure which, the free action of the bowels is absolutely necessary, and one of the most constant concomitant symptoms of which is, the very flaccid state of the breasts alluded to, we must pronounce Dr. Ingleby's criterion, as a general rule, not only inapplicable, but likely, if acted upon, to lead to very erroneous practice. This gentleman seems to have completely confounded cause and effect in his views of the lacteal secretion; as elsewhere, whilst treating of the early application of the child to the breast, he ascribes the cessation of uterine inflammation, to the establishment of this secretion. Now, as far as the observation of others has gone, when the uterine inflammation has yielded, the secretion of the breast, which had been suspended, returned or commenced, and not till then; however we live and learn. After enjoining the usual precautions with regard to the administration of stimulants in hemorrhage, a chapter is devoted to canvassing the operation of opium in these cases. The very large doses, as recommended by Dr. Stewart, are objected to; but it is admitted, that its full exhibition under a formidable exhaustion may be very requisite. Although opium may be occasionally adminis-

tered with advantage *during* a profuse hemorrhage; its salutary effects are more decidedly manifested when the effusion has ceased, and the system been left in a state of great exhaustion: it is here supposed to act as a cordial, through its peculiar and direct influence on the brain and nerves, and indirectly to promote uterine contractility, by sustaining the system under extreme depression. From personal observation, opium is regarded as eminently beneficial, when the hemorrhage is associated with alarming syncope, great irritability, jactitation, threatened abortion, irregular uterine action, or severe vomiting. In order to secure its effective action, Dr. I. has been in the habit of giving it in doses of from sixty drops to two drachms of the tincture, or from two to five grains of the extract, or powder; and in such doses it has proved very successful. Upon the application of cold, it is remarked, to insure its full effect, it is necessary that it be applied frequently and suddenly: pouring water from a height upon the abdomen produces a very marked effect. To this the attention of the profession had been lately much directed by Gooch, although it had long been had recourse to by other practitioners in urgent cases.

As a specimen of this gentleman's physiological reasoning, we may instance his explanation of the means by which hemorrhage from the uterine vessels is prevented after delivery. Although he admits that uterine contraction renders the vessels, for the most part, impervious; yet, with this he is not satisfied, nor can he suppose that the oozing can generally be prevented, unless lymph be also secreted. The excess of lymph in the blood of pregnant women comes to his assistance; it acts first directly by rendering the blood more coagulable, and again, indirectly, by sealing up the ends of the uterine arteries; and the lochial discharge, which, had he considered for a moment, must have shewn him how utterly untenable his views were, is most unaccountably brought forward to establish them; how? because it (the discharge) has been known to cease altogether a few hours after delivery, so that no degree of soil has been observed on the napkin; it is, therefore, proved, that the secretion of lymph is occasionally so perfect, as hermetically to close the vessels; the natural inference from which, according to our author, must be, that in all cases, hemorrhage is arrested by the secretion of lymph. By following this able chain of reasoning a step further, he might have dispensed altogether with the uterine contraction. His remarks upon the administration of ergot of rye are more orthodox; he is, very properly, averse to its use when the os uteri and external parts are undilated. It is suggested, however, that advantage might be derived from its administration before introducing the hand

in placental presentation, with a view to produce contraction of the uterus. We confess we should be very slow indeed to take advantage of this suggestion. Having so frequently suffered inconvenience from uterine action in the process of turning, we should much prefer performing the operation first, without our doing any thing that might add to our delay and difficulties; the ergot may afterwards be had recourse to, if necessary.

Treating of auscultation as a test of pregnancy, Dr. Ingleby says, it is stated that the sound of the fœtal heart has been detected as early as the *tenth week*. Now, it is seldom possible to detect this sound before the period of quickening; even the placental sound does not appear to have been detected before the tenth week, the earliest case of the kind being that recorded by Dr. Evory Kennedy in his paper, to which Dr. Ingleby alludes, in the fifth volume of the Dublin Hospital Reports. Could our author have mistaken this case, and read *fœtal heart* for *placental soufflet?* We are inclined to think he must, as we cannot well imagine it possible to hear the fœtal heart at the period he speaks of; certainly we have never been so fortunate. The administration of digitalis in abortion is objected to, on account of its property of accumulating, and the consequent possibility of injury occurring to parent and child. Although the general use of it is unnecessary, and would be hazardous, yet it cannot be denied that there are certain cases in which digitalis will succeed in checking hemorrhagic action, and reducing the force of the circulation, where every other means would fail: its efficacy in threatened abortion, depending upon this state of the circulation, we have experienced more than once. Rigby's division of hemorrhage into accidental and unavoidable is adopted, and the advantages to be derived from puncturing the membranes in aggravated cases of the former kind, as recommended by him and Puzos, are strongly exhibited. We cannot, however, agree in thinking that we are to be influenced in having recourse to this operation by the state of dilatation of the os uteri; in our opinion, the extent of the hemorrhage, its effect on the system, and the failure of other treatment, must guide us. The operation itself is easily accomplished, and uterine contraction follows, as a matter of course; neither can we enter into the views which sanction the use of the plug in hemorrhage in advanced pregnancies, whether in the accidental or unavoidable form. The external discharge may in this way be checked certainly, but shall not the blood collect within the uterus? again, the very irritation produced by it, and the uterine contractions, which, according to our author himself, are excited by the plug, constitute a sufficient objection to its use, particularly in the latter

form, as these are attended with certain increase of hemorrhage; added to this, it prevents our examining, and thus seizing the earliest opportunity of delivery. Its allowing the country practitioner to ride several miles from his patient, lulling himself into a false security, and, perhaps, returning when death had rendered his further attendance unnecessary, although urged as a recommendation, is to us one of the strongest objections to its application. This practice brings forcibly to our mind the ostrich concealing its head and then thinking itself safe from its pursuers. In placental presentations, as well as in other forms of hemorrhage, too great delay in delivery and manual interference, is generally insisted upon in this treatise. We certainly do not deem it admissible to force the hand into the uterus when the patient is in a perfect state of collapse, and no pulse is to be felt at the wrist, at least without previously endeavouring to restore the circulation by stimulants; but we think it equally reprehensible, when we can easily prevent it, to look on quietly, or to leave our patient for some hours, whilst she is either still losing blood or lying in a state of extreme debility, and liable to a return of hemorrhage; every fresh attack of which is sapping deeper and deeper at the powers of life. These observations apply equally to the treatment recommended in those hemorrhages occurring before and after the removal of the placenta.

We confess we feel at a loss to arrive at our author's meaning, when, after first agreeing in the correctness of the rule laid down by Dr. Joseph Clarke, that the placenta should not be allowed to remain in the uterus longer than two hours, he adds, that it is neither natural or prudent to fix a definite time for the removal of it; the state of the general system on the one hand, and that of the uterus on the other, alone furnishing us with a correct standard of action: he elsewhere speaks of *four days* being the longest period it will be prudent to wait, before removing it. On reading this, we immediately turned to the errata, concluding it to be a misprint, but finding no notice taken of it there, felt constrained to believe the text correct. Now, had he adopted Professor Naegle's views, and said, leave the placenta in the uterus to be absorbed, his recommendation would, at least, have had the merit of consistency, while his practice would have been rather better, as it were safer to leave the placenta in the uterus, than attempt to extract it after four days. But he does not deny, that the longer we delay, the greater will be the difficulty of removing the placenta; neither does he seem ignorant of the mischiefs attending its remaining. Witness his own words: "During its retention, the patient is "exposed to three-fold danger. First—*Hemorrhage*, this "may arise at any period, and will correspond with the degree

" of placental detachment. Secondly—*Inflammation* of the " uterus and contiguous viscera; to this danger the patient will " be exposed after the first day or two. Thirdly—*Irritative* " *fever* of the *most formidable* kind:" and yet, the placenta is to be left *four days* in the uterus!!! We cannot conclude this notice without adverting to the practice recommended, of leaving the second child to nature in twin cases, for he virtually does so in allowing the membranes to remain unruptured for twelve, twenty-four, or thirty hours; that this is highly objectionable, it is unnecessary to go beyond our author's own cases and reasoning to prove. The practice, now generally adopted, of rupturing the membranes of the second child shortly after the birth of the first, offers so many, and such certain advantages, that we are astonished at it being called in question.

Our object has been fairly to canvass the merits of this treatise, and neither to detract from any it might possess, nor spare its errors; for whilst we fully agree in the accuracy of the Latin poet's remark, " *Difficile est proprie, communia dicere,*" we submit that this is the very reason why those who undertake to write upon well known subjects, should be the more competent to the task. While then we admit that his book contains some practical information, and so conveyed as to satisfy us that the author is not entirely devoid of judgment; we confess that this very consideration caused us the more disappointment, and obliged us to be more strict in our duty as reviewers, on meeting with the objectionable parts of it; were it entirely devoid of merit, we did not care for its getting before the public uncommented on, as its worthlessness would render it innocuous. From this it will be seen, that we deem him a person likely to profit by advice, and therefore urge upon him, before venturing as an author again before the public, to amend both his doctrines, and his style; for we confess, as well upon our own account, as upon his, we should not wish to have to deal with

> " Another of the samen cast,
> Pen'd by the poet wrote the last."

Versuch einer Würdigung des Pulses. Von Dr. Joh. Ludw. Formey. *An attempt at an Estimation of the Pulse.* By Dr. J. L. Formey. Berlin, 1823, pp. 204, 8vo.

We have often remarked how greatly practitioners differ in their estimation and nomenclature of the varieties of the pulse, and in the degree of importance they attach to each. A brief

inquiry into the causes of this, and a slight sketch of the literary history of the *ars sphygmica*, as it has been termed, may perhaps be of some use in itself, while at the same time the reader will be better prepared to enter upon the analysis of the work which has given occasion to it.

Writers on the pulse may be divided into four classes, namely, those of the Chinese school, those of the school of Galen, those of the school of Solano, and those who attempt to avoid the absurdities of some and the subtleties of others, and to introduce a more natural and simple doctrine.

We shall commence with the Chinese school, as being the most ancient. An account of their doctrines are to be found in Du Halde's Description of China, and in Kempfer's History of Japan. There are also some professional works on the subject, the best of which are by Cleger,* and Boyme.† Their system is excessively complicated, and absurd in many respects; which makes it the more singular that the study of it has been often strongly recommended, even of late, as for instance by Rucco, whom we shall notice presently. We shall not detain the reader with an analysis of it, which, indeed, to be at all intelligible, would occupy a great deal of room, but proceed at once to the next school. It is a singular fact that Hippocrates, though such an accurate observer, does not once allude to the pulse in his Aphorisms or Prognostics; and though the term σφυγμος occurs in some of his other works, still it is evident that he uses it in the sense of a preternatural throbbing or beating, and not in that in which it was subsequently employed. We know that this has been very much disputed, but we think that facts are in favour of the opinion we have adopted. It is not our intention here to enter into a detail of the controversy; we shall merely state that Schelhammer and Sprengel are the two principal advocates of the one side, and Bellini and De Haen of the other. Aretæus evidently paid much more attention to the subject, and understood it better, as he describes the kind of pulse that occurs in various diseases. Galen, however, is the first that has written *expressly* on the pulse, whose writings have come down to us, and his treatises were considered the standard of excellence for centuries afterwards; indeed, almost all succeeding systematic writers, to the end of the seventeenth century, contented themselves with repeating and illustrating his doctrines. Struthius and Bellini are among the most celebrated. It was at

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* Clavis Medica ad Sinarum Doctrinam de Pulsibus, ex recensione Andr. Cleger. Francof. 1686.

† Opuscula Medica ad Mentem Sinensium. Francof. 1682.

the commencement of the eighteenth century that Solano de Luque, a Spanish physician, published his *Lapis Lydius Apollinis.* This, though the title is in Latin, was a large folio written in Spanish, and would probably have attracted little notice, had it not fallen into the hands of James Nihell, an Irish physician then residing in Cadiz. He was so struck with the novelty, and, at least as he conceived, importance of the views contained in it, that he went to Antequera, the author's residence, to get further information on the subject; and soon after gave to the world his "*New and extraordinary Observations concerning the Prediction of various Crises by the Pulse, independent of the critical Signs delivered by the Ancients.*" This work, which attracted great attention, contained a compendium of the doctrines of Solano, extended and illustrated by the results of the editor's own experience. Michel, Bordeu, and Fouquet followed up and enlarged this view of the subject, and also, particularly the latter, introduced or at least revived and improved the doctrine of organic pulses, namely, that the affections of each organ produce a different kind of pulse, by which they may be recognized. Wetsch, a German, embraced their improvements with great ardour, and even went to France to become acquainted with the authors themselves. On his return to Germany he published his "*Medicina ex Pulsu,*" which is merely a digest of the doctrines of Bordeu and Fouquet. The famous De Haen had them put to the test in the Imperial Hospital at Vienna, and as his report of them was unfavourable, they never made much way in Germany. The Italians, however, are ardent disciples of this school, if we are to judge by the treatises of Gandini, Civillo, Sacchero, printed at Turin in 1823, and Rucco. The last mentioned author, though an Italian, and educated at Naples, published his work in English, in London, so lately as 1827. The only English writers of the school of Solano are, Cox, who published in 1758 his "*Observations on the intermitting Pulse as prognosticating, according to Dr. Solano, a critical Diarrhœa, or as indicating the use of Purging Remedies;*" and Flemyng, whosework entitled "*De Francisci Solani inventis circa Arteriarum Pulsum, et Præsagia inde haurienda Programma; in quo ea secundum receptas in Œconomia Animali Leges solvuntur et explicantur.*" Cox's treatise was translated into French, and published at Amsterdam, in 1766; and Flemyng's was translated by Fouquet, and appended to his own work.

We now come to the fourth class, among whom we may reckon Abercromby, (*De Variatione ac Varietate Pulsus Observationes,* London, 1685, 8vo.): Schelhammer, (*Disquisitio Epistolica de Pulsu,* Helmstadt 1690, 4to.): Sir John

Floyer, (*The Physician's Pulse-watch; to explain the Art of feeling the Pulse, and to compare it with the help of the Pulse-watch;* London, 2 vols., 8vo., 1707, 1710): Falconer, (*Observations respecting the Pulse;* intended to point out with greater certainty the indications which it signifies, especially in feverish complaints; London, 1796, 8vo.) Rumball and Parry also wrote monographs on the Pulse, but more in a physiological than in a semeiological point of view, as will appear from the titles of their respective works; that of the former being "*An Attempt to ascertain the Nature and Cause of the Pulse in a State of Health, as far as it depends on the Contractile Power of the Heart and Arteries, and the Mechanical Effects of the Blood by Distention,*" (London, 1797, 8vo.); and that of the latter, "*An experimental Inquiry into the Nature, Cause, and Varieties of the Arterial Pulse.*" (1816, 8vo.).* There is a curious Essay on the Pulse in Stedman's "*Physiological Essays and Observations,*" (Edinburgh, 1769, 8vo.); and there is a paper by the celebrated Heberden, in the second volume of the London Medical Transactions, which, while it contains some useful remarks, has, we think, been productive of injury, inasmuch as he reduces all observations of the pulse to that of its frequency, as that can be so exactly measured by a watch. We believe Sir John Floyer was the first who introduced the practice of using a watch for that purpose. We must not omit an Essay by Dr. Robert Knox, in the 11th vol. of the Edinburgh Medical Journal, entitled "*Observations on the Diurnal Revolutions of the Pulse, &c.;*" nor another by Dr. R. J. Graves, in vol. 5. of the Dublin Hospital Reports, "*On the Effects produced by Posture on the Frequency and Character of the Pulse, in Health and in Disease.*" The most comprehensive work, however, on this branch of the doctrine of the Pulse, is a Prize Essay, published at Tübingen, in 1826, by Dr. G. H. Nick, entitled, "*Beobachtungen über die Bedingungen, unter denen die Häufigkeit des Pulses im gesunden Zustand verändert wird.* Observations on the Conditions under which the Frequency of the Pulse becomes changed in the Healthy State." The author appears to be well acquainted with the previous researches of Falconer and Knox; but his Essay contains besides a great deal of original and interesting matter.

Besides the monographs we have enumerated, there are others in various languages; some of which are of inferior note, and others we have not been able to see, or to learn any thing

* We have given the titles of these works in full, that the reader may be the better able to judge of the nature of their contents.

about their character. Amongst such are those of Memuret, (Paris, 1768); Claye, (Paris, 1809); and Burserius. The last-mentioned was published at Verona in 1820, edited by Berti. Kurt Sprengel wrote a work entitled "*Beiträge zur Geschichte des Pulses.* Contributions to the History of the Pulse, (Leipzig and Breslau, 1787)", but we have not been able to procure it. As a matter of curiosity, we may mention, that in 1747, a Frenchman of the name of Marquet published a treatise on the art of learning the pulse by means of musical notation, the second edition of which appeared in 1769, after the author's death, with additions by Buchoz. It seems that the system had some followers, even in this century, as a work, under the title of "*L'Art de connaitre et de designer le Pouls par les Notes de la Musique,*" was published in Paris in 1807. It professes to be by Buchoz, but whether it is a new edition of the preceding, or a distinct work, we cannot say; most likely the former. But we must now proceed to Dr. Formey's treatise.

The author informs us in his preface, that it owes its origin to his having been for several months affected with a most painful organic disease of the intestines, during the course of which his pulse continued natural, notwithstanding his great sufferings, and constant loss of sleep. He was naturally induced to reflect on the causes of this, and to consult the works of others for additional information: the result is now before us. He remarks, "as yet we have no rational doctrine of the pulse, although there "is no want of materials for it; and though many of its relations "to the healthy and diseased state of the body are not yet per-"fectly elucidated, still the inquiries on this point have already "led to such instructive results, that if a sagacious, scientific, and "experienced physician were to undertake the task, his work "would prove a valuable contribution to the healing art."

Dr. F. commences with some remarks on the origin and progress of sphygmics; after which he gives an account of Bichat's and Parry's observations on the circulation and pulse, and agrees with the latter, that the arteries are completely passive, that the pulse is caused by the contraction of the left ventricle, and that its varieties depend upon the state of the heart, and on the degrees of elasticity and tonicity of the arteries. He ought to have added that the quantity of blood in the system must also have some influence. He justly remarks, that what makes it so difficult to judge correctly from the pulse, is the circumstance that there is no such thing as a general standard pulse, every deviation from which might be considered a morbid phenomenon. On the contrary, idiosyncracy, age, sex, constitution, even size, all tend to modify the pulse, while climate, season, manner of living, and the non-naturals must also be

taken into account. Another circumstance is, that feeling is the most imperfect of all our senses, at least when not greatly exercised. After some observations on the state of opinions in Germany with regard to the pulse, the author proceeds to consider "Under what circumstances the accurate examination of "the state of the pulse can really assist the practitioner in dis- "covering the nature, seat, and degree of the disease; and how "far it can direct him in his treatment and prognosis." To answer this, he considers the phenomena presented by the pulse under various circumstances commencing with fever; but want of room obliges us to postpone our analysis of his observations on this and the remaining topics of inquiry, to our next number.

SCIENTIFIC INTELLIGENCE.

CHEMICAL SCIENCE.

Biographic Notice of Serullas.—George Simon Serullas was born in 1774, at Poucin, a small village in the department de l'Ain; his father was a notary. Having been bound to an apothecary, the illustrious anatomist, Xavier Bichat, was his fellow apprentice.—During the midst of the great revolution, his youth was spent in the military hospitals, where his great intelligence and wish for information showed that he was one destined for the improvement of his age. His talents were recognised by Parmentier and Payen, and at the age of twenty-two years he was appointed "Pharmacien Major;" but during the movements of vast armies, Serullas had but little time or means for accomplishing his wishes for instruction; his genius was not as yet unfolded, and notwithstanding his having received medals of encouragement from the Society of Agriculture, and from the Society of Pharmacy, for some memoirs on grape sugar, he was obliged, in the capacity of "Pharmacien en Chef" to the division under Marshal Ney, to exhaust his ardour in the German campaigns, and to endanger an existence which was reserved for higher destinies.

At the destruction of the empire, he could hope for an occupation more conformable to his taste. Appointed, in 1814, as Professor to the Military Hospital of Instruction, at Metz, and at length free to devote himself to his well loved studies, he precipitated himself into that career to which his talents called him. He soon felt the necessity of re-arranging his intellectual existence, and at the age of forty-two he commenced the study of Greek and Mathematics.

With Serullas, study was a passion: days, nights, were successively consumed without his regarding fatigue, expense, or health. Thus he soon elevated himself, not only to the level of existing knowledge, but soon he excelled his masters. He commenced public courses of lectures at the hospital at Metz, and the interest of the novel experiments demonstrated by this Professor, attracted to his lectures the pupils of the School of Application of Military Genius, who had finished their education at the Polytechnic School. They admired the knowledge of Serullas—those who had attended the most distinguished chemists and physicians of the capital.

Serullas met with immense difficulties—he overcame them all. In 1820, he recognized the presence of potassium in antimony fused

with cream of tartar: he detailed the curious facts connected with this subject, and demonstrated the existence of arsenic in all the antimonial preparations, except tartar-emetic. He obtained from the last, heated in a close vessel, with charcoal, a true pyrophorus fulminating by the addition of a single drop of water. His beautiful memoirs on the per-iodide and the proto-iodide of carbon, those on the iodide of cyanogen (a most deleterious compound to experiment on) attracted the attention of the Institute. He prosecuted his researches on bromine, by forming hydro-bromic ether and bromide of cyanogen. He bore away from the illustrious Davy the priority of the fact relative to the gyratory movements of alloys of potassium on mercury and on water, by proving that they depended on electro-chemical action.

It is difficult even to enumerate, in our limited space, the names of the combinations formed by Serullas, of iodine, bromine, chlorine, the hydracids, &c. amongst each other or with carbon or the metals. Thus his perchloride of cyanogen, obtained in beautiful crystals of a brilliant white colour, is one of the most deleterious substances known—its odour alone is immediately fatal. His novel researches on sulphuric ether are not less interesting—he obtained a neutral sulphate of carburetted hydrogen, and a very remarkable crystalline substance formed of bi-carburetted hydrogen. Besides these numerous new bodies, Serullas succeeded in isolating cyanic acid—he examined the chloride and phosphide of sulphur: he obtained, also, the iodates of potash and iodic acid, by very ingenious processes: he showed that this last acid is capable of being used in a test for morphia and some other vegetable alkalies. The memoirs on the perchloric acid and the perchlorates, the crystallization of perchloric acid, and the use of this reagent to separate potassa from soda, finally the bromide of silicium and the hydro-bromate of phosphuretted hydrogen, are some of the new substances which we owe to his more recent investigations.

At the death of the illustrious Vauquelin, in 1829, the eyes of all were turned on Serullas—he was overflowing with researches and discoveries. Although destitute of any property but his situation, he spared no expense to procure the most exact instruments—the most rare and new substances, which he submitted to examination. Such was his ardour, that every day he rashly hazarded his life in dangerous experiments; more than once he had nearly perished in the vapours of these compounds of chlorine, cyanogen, azote, &c. Nothing stopped him for an instant: the happiness of a discovery atoned for all difficulties and dangers.

Desirous of gaining incontestable glory, he operated on hitherto untried substances, and penetrated into paths of research before unexplored. Thus did he enter, triumphantly, the portals of the Institute: far from slumbering in the academic chair, each week saw him bring into light some train of research; the mine was open, and incessantly he extracted from it the most profound riches. No petty pride or jealousy contaminated his love for science: he ani-

mated, by his praises, the zeal of the younger chemists, and mixed, without manifesting superiority, in the labours of the Society of Pharmacy.

Harassed by such unintermitting labours, first in the army and afterwards in his laboratory, his robust and energetic constitution had been broken. His bilious and ardent temperament consumed itself in its own fire. How often, neglecting his health, has he not been all but poisoned, or asphyxiated, in his hazardous experiments. From this negligence resulted a chronic gastritis, which forcedhim to renounce all stimulating food, and to confine himself to milk and vegetable diet.

From such a state of the digestive organs, we may conceive how predisposed he was to cholera: he was very much afraid of it. When that destructive disease appeared in Paris, his temper, hitherto gay and joyful, became sad, and the future appeared to him covered with a sable veil. Thus affected, he went to the obsequies of Cuvier, to the Jardin des Plantes. At this time the chair of Chemistry, vacant by the death of Laugier, was destined for him: a most brilliant career was opened for Serullas, and he had the hope of at once increasing his renown by new discoveries, and of being the cause of the comfort of his parents, as he had always been of their happiness.

Who, alas, would have thought, that that very day death should greet him on his return from that sad solemnity. He got wet and cold: the most energetic resources of art were in vain employed against an attack of cholera, which, on the 26th May, bore him away from science and from friendship, after an illness of nine hours.

Honorable, irreproachable, he loved and was beloved by all. His name will remain celebrated by his discoveries—his sole fortune—the only crown of his life. A disinterested and true mourning was apparent at his funeral: unanimous and lively regret burst forth over his tomb. He is buried near the great naturalist, whose death appeared to have broken the ties that connected him to life.

Preparation of Caustic Potash, by J. Liebig.—The preparation of caustic potash is a well-known operation, but it is interesting, and may be useful to many, to fix their attention to the circumstance on which the caustification of the carbonate of potash depends: it is the water which, in this operation, plays the most important part.

If we dissolve one part of carbonate of potash in four parts of water, and boil the solution with slaked lime, the potash does not part with the smallest trace of carbonic acid: it does not become caustic, either by augmenting the quantity of lime in any proportion, or by continuing the ebullition for a longer time. If we use quicklime we will have the same result, provided we use the same proportion of water: but if we gradually add six more parts of water, we shall find that, without any more boiling, the alkali gradually loses its carbonic acid, and that after the addition of the last quantity

of water the potash is entirely caustic: if we add the water at once, the potash caustifies very rapidly.

This peculiarity is easily explained: a concentrated solution of caustic potash abstracts carbonic acid from carbonate of lime. We may easily assure ourselves of this fact, by boiling some strong solution of potash free from carbonic acid on chalk, the filtered liquor will effervesce strongly with acids.

To prepare caustic potash, we should dissolve the carbonate of potash in at least ten parts of water, we would do well to add the lime successively in small portions, as long as that which has been previously introduced falls into a sandy powder and deposits easily. By this mode we avoid a loss of potash, as the carbonate of lime which remains thus, may be washed perfectly and easily with a very small quantity of water. If we take the quantity of water mentioned above (a larger quantity is better) we should employ two parts of quick lime to three of carbonate of potash: operating thus, the ebullition, even for large quantities, need not be very long.—*Annales de Chimie, Fevrier*, 1832.

Preparation of Chlorate of Potash, by J. Liebig.—I have made many trials to prepare the chlorate of potash from chlorite of lime (chloride of lime, bleaching powder) by an economic process: Their result has been sufficiently satisfactory to induce me to publish the process for the good of manufacturers of the article. I am, nevertheless convinced that in their hands it is capable of many advantageous modifications.

We take chlorite of lime and warm it (in the dry state or in solution) until it no longer destroys vegetable colours. We know that we thus obtain a mixture of chloruret of calcium, and of chlorate of lime; we dissolve in warm water, concentrate the solution, and then add chloruret of potassium. We obtain by cooling a quantity of crystals of chlorate of potash, which we may crystallize a second time in order to obtain them perfectly pure. Thus prepared, this salt is obtained at a very moderate expense.

The only difficulty which is met with in the manufacture on the large scale is easily removed; it is that the chlorite of lime is not so easily decomposed by heat as is generally supposed. A solution of it could be kept boiling for an hour without losing its bleaching powers. I have found that it is better to form an emulsion with the dry chlorite of lime and water, and then to evaporate to dryness.

The chlorate of potash which is obtained at the first crystallization, has not the form of scales that it commonly possesses, but it is deposited in oblong prisms and in needles. I do not know whether this is owing to the presence of any foreign salt; at any rate, it assumes its proper form on a second crystallization.

We should not be content with allowing the solution to cool, the crystallization is then very far from being completed, copious depositions of crystals take place for the three or four succeeding days.—*Annales de Chimie, Mars*, 1832.

Source of Napthaline.—M. Reissenbach has recently controverted the common opinion, that napthaline exists, ready formed, in coal tar, and that it could be obtained simply by distilling that substance. His experiments, which appear very satisfactory, go to prove that the napthaline is a result of the decomposition of the tar by heat. He attempted to obtain by the simple distillation of coal, the napthaline, according to the process of Chamberlain and Garden, but without success: mere distillation, no matter how often repeated, not yielding any napthaline as a product.

Neither could M. Reissenbach separate napthaline by distilling ood tar, nor that obtained by the dry distillation of animal matters, although the former yields large quanties during its conversion into lampblack. From his numerous experiments he concludes that napthaline does not exist in coal.

He considers napthaline to be a new product arising from the decomposition of the tar. Organic and semi-organic matters, as coal, &c., give, by distillation, only empyreumatic oils, and it is during the conversion of these last into lampblack that napthaline is produced. Its origin seems to be a second act, and arises from the decomposition of the liquid and volatile products of carbonization.—*Annales de Chimie at de Physique, Janvier,* 1832

Composition of the Fluid of the Ventricles of the Brain, by Haldat and Lassaigne.—The encephalic serum is colourless, perfectly transparent, nearly inodorous, and slightly saline to the taste; it is scarcely viscid, does not alter the colour of turmeric-paper—alkalies do not produce any change; it is precipitated dirty white, by corrosive sublimate, muriate of tin, and nitrate of silver, tincture of galls produces a flocculent yellow deposit; finally, a very trivial cloud by oxalic acid, and oxalate of ammonia.

The serum of the ventricles contains

Water, - - -	96,0
Muriate of Soda, - -	1,5
Albumen, - - -	0,7
Gelatine, - - -	1,0
Mucus, - - -	0,4
Phosphate of Soda and Lime, and Loss - -	0,4
	100,0

The cephalo-rachidian liquor of a horse, sp. gr. = 1006,5, contained, by Lassaigne's analysis:

Water, - - -	98,180
Ozmasome, - -	1,104
Albumen, - -	0,035
Common Salt, - -	0,610
Sub-carbonate of Soda,	0,060
Phesphate of Lime and traces of Carbonate of the same base,	0 009
	99,998

Phosphorus, or the soluble phosphats, were carefully sought for in this liquor, but without effect.—*Bulletin des Sciences Medicales, September,* 1831.

New Process for obtaining Cobalt and Nickel free from Arsenic, by M. Liebig.—The ore of cobalt is to be carefully roasted, broken into small bits, and fused in an earthen or iron crucible, at a moderate heat, with bi-sulphate of potash, in the proportions of three parts of the salt to one of roasted ore; as the mass gradually hardens, the fire is to be increased, and the mass kept in fusion until no more white fumes are given out.

All the mass thus obtained, reduced to fine powder, is to be boiled in water until the powder is no longer rough to the touch, or granular. The whole is then allowed to settle, and the rose-coloured liquor is to be poured from off a whitish deposit. The oxide of cobalt may be precipitated by potash, and the precipitate washed very often with boiling water. The supernatant liquor may, by the addition of sulphuric acid, be brought to the state of bi-sulphate of potash, and after evaporation to dryness, may be used for another operation.

The oxide of cobalt, thus obtained, contains no nickel, it may contain iron or copper, from which it may be separated in the common way.

To obtain pure nickel, kuper nickel is to be well roasted, mixed with an equal weight of powdered fluor spar, and the whole put into a leaden vessel; three parts of sulphuric acid is to be then poured on, and heat applied; when the temperature is above 80° R. the mass grows thick, and it is necessary to stir it well to prevent it sticking to the bottom of the vessel. The quantity of vapours of arsenic and of fluoric acid that are disengaged render it necessary to perform the operation under a good chimney. When the mass is dry it is to be broken, and warmed moderately in a reverberatory furnace, then dissolved in boiling water, filtered, and the iron separated in the ordinary manner. The nickel exists in solution then perfectly pure.—*Journal de Pharmacie, Avril,* 1832.

Action of Light on Solutions of Platinum.—When a solution of platinum in nitro-muriatic acid, in which the excess of acid has been neutralized by the addition of lime, and which has been well cleared by filtration, is mixed with lime-water, in the dark, no precipitation to any considerable extent takes place—for a long while indeed, none whatever; though after very long standing, a slight flocky sediment is formed, after which the action is arrested entirely. But if the mixture, either freshly made, or when cleared by subsidence of this sediment, is exposed to sunshine, it instantly becomes milky, and a copious formation of a white precipitate (or a pale yellow one if the platinic solution be in excess) takes place, which subsides quickly, and is easily collected. The same takes place more slowly in cloudy daylight.

This remarkable action is confined to the violet end of the spectrum. I have exposed tubes of the mixed liquids immersed in the sulphuric tincture of red rose leaves, to strong sunshine for whole days, and (after the first slight deposit already mentioned, which ceases in the first hour, the remainder is altogether insensible to red light; but the moment it is taken out of the red liquor and held in free sunshine, the usual precipitation takes place as copiously as if it had been all the time kept in total darkness. Even yellow liquids suffice to defend it.

The precipitate itself is a remarkable one, being a combination of the oxide of platinum with lime, in which the oxide seems to perform the part of an acid (a property of this oxide which I believe has been before remarked; though at this distance from my books I cannot say by whom). Muriatic acid dissolves it readily without effecting any decomposition, even when added in too small quantity to take up the whole. Nitric acid also dissolves it; (when newly formed and moist, entirely; when dried, with some residue of oxide). The nitric solution is precipitated by nitrate of silver, and the precipitate, which is of a high orange colour, and which is a true *platinate of silver*, is easily distinguished from muriate of silver, not only by its colour, but by its insolubility in the liquid hyposulphites.—*Philosophical Magazine, July*, 1832.

Safety Tube for burning the mixed Gases.—A cylinder, about six inches long and three-quarters of an inch wide, is filled with very fine brass wires, in lengths equal to the tube. A pointed rod of metal, one-eighth of an inch thick, is then forcibly inserted through the centre of the bundle of wires in the tube, by which they are wedged more closely together. The interstices between the wires, which are exceedingly small, are then in effect a series of metallic tubes, of very minute diameter: the cooling and conducting power of these is far greater than could be produced if a cylinder of equal length were filled with disks of wire gauze, as the apertures are much smaller than those in the finest gauze, and there is unbroken continuity. All attempts to produce explosion of the gases in this tube, or to compel the flame to return through it, have been ineffectual. Before the Society of Arts, Mr. Heming exploded the gases repeatedly in the improved safety chamber, now employed in Gurney's blow-pipe, by permitting small portions of water from the well to enter with them, but he could not explode them in his improved tube under precisely the same circumstances, although they were ignited at the aperture (nearly three quarters of an inch in diameter,) after the jet piece was removed.

Mr. Heming kept the gases ignited at this large aperture until the extremity of the tube was in a state of active combustion, which was evident by the dense green flame produced; and although the cooling influence was then greatly diminished, no explosion occurred.

The simplicity of its construction will render the manufacture of the article easy and economical; and its perfect safety will enable

the chemical operator to dispense with a very expensive and delicate article of apparatus, in the use of which there is always danger and uncertainty.—*Philosophical Magazine, July*, 1832.

Isomeric Modification of Tartaric Acid, by Braconnot.—It is well known that the tartaric and racemic (paratartaric) acids were the first well defined examples of isomerism. The judicious reflections of M. Dumas on this extraordinary phænomenon have recalled a fact belonging to it, and which I had occasion to observe, respecting tartaric acid.

Forty parts of this acid having been exposed for an instant to a considerable heat, they fused, swelled up, and left, after cooling, a dry yellowish matter, which was transparent like gum, and weighed 36.5 parts. This substance when softened by heat acquired great ductility, which allowed it to be drawn into threads as fine as hairs.

This change of form, which recalls the dimorphism of sulphur, shows either a new molecular arrangement, or another isomerical modification. In fact, the tartaric acid thus submitted to the action of heat no longer possesses its original properties; it is uncrystallizable, and is merely a thick viscid mucilage, which attracts moisture from the air.

If this substance be dissolved in hot water, and carbonate of lime be gradually added to saturate it, it does not form, as with common tartaric acid, a sandy deposit of crystallized tartate of lime, but the solution becomes gradually turbid as it cools, and deposits a mucilaginous, transparent, insipid mass, which forms threads between the fingers like turpentine. This calcareous salt when dried is unalterable in the air, and resembles gum arabic. When heated in water or weak acetic acid, it softens, resuming its viscid and adhesive properties, without being sensibly dissolved; an excess of acid, however, re-dissolves it, especially when hot, and by evaporating the solution to dryness, there remains a dry, brittle, acidulous substance, which is transparent like a varnish, is unalterable by the air, and which when immersed for some time in cold water seems to undergo a molecular motion, which reproduces tartaric acid in its original state, for then there separates a sandy deposit of common tartrate of lime.

Tartaric acid modified by heat, also dissolves magnesia and yields a bitter liquor, which leaves a varnished surface by evaporation. Crystallized tartaric acid acts quite differently with this earth, for it immediately precipitates a white powder, which is difficultly soluble in water; the same modified acid, saturated with soda, produces an uncrystallizable mucilaginous combination, which attracts moisture from the air.

With potash an analogous result is obtained; and if to the compound an acid be added in excess, a very greatly divided precipitate is formed, as difficultly soluble as tartar, but which has not its granular appearance, when re-dissolved in hot water, it gives by cooling white opake plates in which rudiments of crystals are scarcely discernible;

this acidulous salt when saturated with soda gives a salt analogous to Rochelle salt. Although tartartaric acid, when exposed to heat, is not a very permanent isomeric substance, it evinces at least a remarkable tendency to this state.—*Ann. de Chim. et de Phys.* xlviii. 299.

Analysis of the Seeds of the Lithospermum officinale, by Capt. Le Hunte.—This may be considered one of the most remarkable substances in the vegetable kingdom, its properties, mechanical and chemical, are those of a mineral rather than that of a vegetable. The seeds resemble small, pear-shaped, porcelain beads; they are very hard, difficult to break, and have a high polish. When heated, they at first become black; but they do not shrink, nor does a white heat change their form in the slightest degree; it destroys, however, their lustre, and renders them, when the vegetable matter has been consumed, whiter than they were originally. Before the blow-pipe, small pointed fragments of the pericarp may be partially fused; but this requires a good heat.

To determine the nature and quantity of the earthy constituents, the pericarps were carefully separated from the enclosed seeds, and exposed to the action of dilute muriatic acid; a violent effervescence immediately commenced, which did not entirely cease for upwards of two hours. At the end of twelve hours, the acid liquor was decanted, and the pericarps were well washed. Their appearance was not in the least changed; when dried, at a moderate heat, they still retained their original lustre. The acid liquor was found to contain a great deal of lime, a very little phosphate of lime and oxide of iron, with traces of potash and magnesia, which were separated in the usual manner.

The pericarps were then heated to destroy the vegetable matter, which it is exceedingly difficult to effect; but notwithstanding the intense heat employed, the form of the fragments was not changed by it, they merely lost their lustre, and became very white. When the vegetable matter was entirely consumed, they were again treated with muriatic acid, and left in a warm place for several hours. The acid took up a very little phosphate of lime and oxide of iron. The matter insoluble in the acid was fused with carbonate of soda, and found to be pure silica. The analysis was repeated, and the composition of the substance appeared to be very uniform. The following is the result:

Carbonate of Lime, - - - - -	43.70
Silica, - - - - - -	16.5
Vegetable matter, small quantity of phosphate of lime and oxide of iron, with traces of potash and magnesia,	39.8
	100

The silica appears to form the polished surface of the seeds. As the acid acted upon the vegetable matter of the pericarps, and took

up a little phosphate of lime and oxide of iron, that could not be weighed accurately, it was scarcely possible to estimate the quantity of carbonic acid that they contained, from the loss of weight caused by the effervescence. I found it a little greater than it ought to have been, on the supposition that the whole of the lime was in the state of carbonate; and I did not think it necessary to have recourse to a more delicate mode of ascertaining its quantity, for I had no reason to suspect the presence of any other salt of lime, excepting a small quantity of the phosphate. When the dilute muriatic acid was applied to the pericarps, the effervescence was brisk; but they appeared to offer some resistance to its action; and when they were not allowed to remain in contact with it, for at least twelve hours, the silica always contained a little lime. Nitric acid, which acted more powerfully upon the vegetable matter, dissolved the lime speedily, the fragments became very thin, and the siliceous coating alone was left; but, in this case, it was quite impossible to make any calculation for the carbonic acid.

An examination of a larger quantity of these seeds might afford some interesting results; and the whole plant is worthy of attention. I may remark, that they had been collected a year when the analysis was made.—*Edinburgh Philosophical Journal, July*, 1832.

Analysis of Labrador Felspar, by Capt. Le Hunte:—

Silica, - -	54.674
Alumina, - -	27.889
Lime, - -	10.600
Soda, - -	5.050
Potash, - -	0.490
Magnesia, - -	0.181
Protox. of Iron, -	0.309
	99.193

The specimen analyzed was found near Campsie, in a porphyritic greenstone. It was in the form of long narrow crystals, nearly transparent and colourless, of a foliated structure, and vitreous lustre. Its specific gravity was 2,689. The larger crystals frequently present a flat conchoidal fracture, which first induced me suspect that it was not felspar. From the great difficulty that I experienced in procuring the mineral in a pure state, the analysis was made upon a small scale; but it was repeated with nearly the same result. It appears, then, that this mineral is labradorite, with the best analysis of which the foregoing nearly agrees. The large crystals of labradorite that are imbedded in trap-rocks are very much cracked, and so impure that they cannot be employed for analysis.

About two miles to the west of the village of Milngavie, near the road between Glasgow and Strathblane, there is a very remarkable brown porphyritic trap, that contains large and beautiful crystals of yellow labradorite. These crystals are cracked, and when heated,

present numerous brown spots, which show that they are not pure. The following is their composition:—

Silica, - -	52.341
Alumina, - -	29.968
Lime, - -	12.103
Soda, - -	3.974
Potash, - -	0.301
Perox. of Iron, -	0.866
	99.553

All the analysis of labradorite that have hitherto been made differ a little from each other; some agree with my first analysis, while one of Klaproth's differs but little from the last. It is probable, that, owing to its structure, labradorite has seldom been examined in a pure state.

The chemical characters of labradorite enable us to distinguish it from felspar, even when the quantity for examination does not exceed a grain. For this purpose the mineral, in the state of an impalpable powder, is treated with weak muriatic acid in a watch glass, and gently heated for an hour. The solution is then evaporated to dryness, and the saline residue is heated until the excess of acid be expelled when it is re-dissolved in water. To the clear solution, when warm, a few drops of oxalate of ammonia are added, which produces a precipitate of oxalate of lime if the mineral be labradorite, but does not produce a precipitate if it be pure felspar.—*Edinburgh Philosophical Journal, April*, 1832.

PHYSICAL SCIENCE.

New Analyser.—A paper was read "On a new analyser, and its use in experiments of polarization," by Prof. Airy.—The author mentioned this as an instance in which results deduced from Fresnel's theory had been confirmed by observation, and which therefore served to establish the correctness of that theory. The experiments were suggested by a consideration of the theoretical use of the analysing plate in the ordinary polarizing apparatus. The light which falls upon a crystalline plate has upon emerging from it the same intensity (neglecting the loss of light at the surfaces, &c.) as before it entered; and consequently no coloured rings can be seen. By the use of an analysing plate, coloured rings are seen in experiment; and the theoretical explanation of this is, that the analyser has resolved the light that emerges from the crystal into two streams of light polarized in planes at right angles to each other, of which it has suppressed one, and transmitted the other to the eye. The calculation founded on this, represents correctly the phenomena. But it is plain

that, allowing the truth of this general explanation, different kinds of analysis may be conceived: —of these, that which comes next in simplicity to the ordinary kind is, the resolution of the emerging light into two streams; one, circularly-polarized and right-handed; the other, also circularly-polarized, but left-handed; and the suppression of one of these streams. The effect of this analysis is not immediately obvious when the light incident on the crystal is plane-polarized; but when it is circularly-polarized, one remarkable result presents itself. As the only incident light has no relation to sides, and the only light allowed to emerge has no relation to sides, the coloured rings can have nothing which bears any trace of sides except in the crystal itself. Consequently there can be no black cross or black curve as with the usual apparatus, (for the positions of these are determined by the planes of polarization), and therefore Iceland spar will produce circular rings; and nitre, &c., will give uninterrupted lemniscates. And as a general rule, the amount of light of any ray which comes to the eye, will depend upon nothing but the difference of paths of the corresponding ordinary and extraordinary ray in the crystal. An analysis of this kind might throw considerable light on the mechanical state of unannealed glass, &c. The author then showed that such an analyser would be produced by combining the ordinary analysing plate with Fresnel's rhomb, or with a plate of mica of the proper thickness. The experiments (which were exhibited to the members of the Society present) corresponded completely with the anticipation. Allusion was also made to a more general kind of resolution; namely, into two streams of elliptically-polarized light; but this subject was not pursued by the author into the same details as the other.—*London and Edinburgh Philosophical Magazine, July*, 1832.

Report on Faraday's Paper.—The following Report, drawn up by Samuel Hunter Christie, Esq., M.A., F.R.S., and John Bostock, M.D., V.P.R.S., on Mr. Faraday's Paper, read before the Royal Society on December 15th, 1831, and entitled "Experimental Researches in Electricity," was read.* In the first section of this paper, the author considers the induction of electricity in motion.

Shortly after the discovery by Oersted of the influence of electricity in motion on a magnetic needle, it was almost simultaneously discovered by Arago, Davy, and Seebeck, that iron became magnetic by induction from the connecting wire of a voltaic battery, or the passage of an electric current; but though the effects at first observed were afterwards greatly increased by peculiar arrangements, induction was in all cases restricted to iron. Arago's beautiful experiments on magnetic needles vibrating within metallic rings, and on the mutual action of all metals and magnets, when either is in motion, are undoubtedly instances of a peculiar magnetic induction in other metals than iron; but the very doubtful experiment of Ampère can scarcely be adduced as one. The singular results obtained by MM. Marianini, De la Rive, and Von Beck, referred to by our author, are

probably due to electric induction. But none of these can be considered as having originated the discoveries described in the present paper, excepting so far as all new views originate in the contemplation of results previously obtained.

In this section of his paper the author shows that a peculiar state is induced in a copper wire which is in the immediate neighbourhood of another, through which an electric current passes, that is, which forms the connecting wire in a voltaic circuit. This state of the wire was manifested by its action on a magnetised needle, and by the induction of magnetism in steel wire submitted to its action.

Two copper wires, each more than 200 feet in length, were wound in the same direction round a large block of wood, the coils of the one being interposed between those of the other, and metallic contact everywhere prevented. The ends of one wire were connected with a galvanometer, and with the ends of the other, contact could be made or broken with a battery of one hundred and twenty pairs of plates. On the contact with the battery being made, the needle of the galvanometer was invariably impelled in one direction, and on the interruption of the contact, it was always impelled in the contrary. After the first impulse on the completion of the voltaic circuit, the needle resumed its natural position, no permanent deflection whatever occurring during the time that this circuit remained complete.

On substituting a helix of copper wire formed round a glass tube for the galvanometer; introducing a steel needle; making contact, as before, between the battery and the inducing wire; and then withdrawing the needle, previously to breaking the battery contact, it was found to be magnetised. If the contact was first made; a needle introduced in the tube; the contact broken; the needle on being withdrawn was found to be magnetised to the same degree nearly as the first, but the poles at the corresponding ends were of the contrary kind.

If the circuit between the wire under induction and the galvanometer was not complete when the contact with the battery was made, then no effect on the needle was observable either on completing or again breaking the first circuit. But the battery communication being *first* made, and *then* the wire under induction connected with the helix containing the needle, on interrupting the battery circuit, the needle was magnetised. These last facts, in a theoretical point of view, are most important: they prove that on completion of the voltaic circuit, the state of the wire under induction undergoes a double change, the one momentary, the other permanent so long as the voltaic circuit remains complete, and only exhibiting a momentary action on the interruption of that circuit.

From the experiments detailed in this section, the author concludes, that currents of voltaic electricity produce, by induction, currents (but which are only momentary), parallel to or tending to parallelism with the inducing currents; that the induced current, by the first action of the inducing current, is in the contrary direction to,

and by its cessation in the same direction as, that of the inducing current.

The author next introduced iron into his arrangement, by which means a double induction took place, the iron itself becoming magnetic by induction, in the first instance, and electricity being induced in the copper wire from the magnetized iron, in the second. The effects were here of precisely the same character as before, but greatly increased. By this arrangement unequivocal evidence of electricity in the wire under induction was obtained; for not only was the needle in the galvanometer violently affected, but a minute spark could be perceived on using charcoal at the ends of that wire.

On dispensing altogether with the voltaic arrangement, and substituting for the electro-magnet a cylinder of soft iron, rendered magnetic by contact with two bar magnets, or a common cylindrical magnet of steel, similar results were still obtained. The arrangement and the effects were simply these: several helices of copper wire were formed, in the same direction, round a hollow cylinder of pasteboard, metallic contact being prevented between the contiguous coils: of these, either the *alternate ends* were united, to form *one* long helix, or *all* the corresponding ends to form a *compound* helix; and within the pasteboard cylinder, a cylinder of soft iron was introduced: on the ends of this cylinder being brought into contact with the poles of two bar magnets, united at the other ends so as to resemble a horse-shoe magnet, the needle of the galvanometer was impelled in one direction, and on the contact being broken, in the contrary. Similar effects were produced by simply introducing a cylindrical steel magnet into the hollow cylinder over which the copper wire was wound. The effects were strikingly increased, but were still of precisely the same character, when Knight's large compound magnet, belonging to the Royal Society, was substituted for the bar magnets. Here, the mere approximation to the magnet, of the compound helix, whether containing the cylinder of soft iron or not, was sufficient to impel the needle in one direction, and its recess from the magnet, to give a contrary impulse. But even here, the effects were purely impulsive, the needle invariably returning to its undisturbed direction, when the contact was continued.

As in the voltaic arrangement, a small voltaic apparatus, sufficient to deflect the needle of the galvanometer 30° or 40°, being introduced between the galvanometer and the helix under induction, produced no effect on the impulses given to the needle, on making and breaking contact of the iron cylinder with the magnet: nor did the power of this arrangement appear to be affected after making the contact or after breaking it.

Although all attempts to obtain chemical effects or a spark in this case failed, yet we agree with the author that these experiments prove the production of electricity by ordinary magnetism, and think the reasons which he adduces for its want of energy satisfactory.*

* Since this report was written, a brilliant electric spark has been obtained by

This discovery has therefore supplied the link in the chain of connexion between electricity and magnetism, which has been wanting since Oersted's discovery. That the electricity developed acts in a peculiar manner, so far from diminishing the interest attached to the discovery, adds greatly to its value.

After the detail of these perfectly original and highly interesting experiments, the author considers the peculiar electric state of the wire when subjected either to volta-electric or magneto-electric induction. This state he terms the electro-tonic state.

Unlike the induction from electricity of tension or the ordinary induction from a magnet, this state of the wire is not analogous to that of the inducing wire; for whatever may be the permanent state of the wire under induction while the voltaic circuit is complete, or the magnetic contact is unbroken, so long as either of these continues, there is no evidence of any change having taken place in it, and its change of state is only rendered manifest at the instant of interrupting the circuit or the contact, and at that of again renewing them; impulsive forces being brought into action at either instant, but in contrary directions in the two cases.

The author observes, that this peculiar condition shows no known electrical effects whilst it continues, nor has he yet been able to discover any peculiar powers possessed by matter whilst retained in this state; that no re-action is shown by attractive or repulsive powers; that no retarding or accelerating power is exerted upon electric currents passing through metal in the electro-tonic state, that is, the conducting power is not altered by it; that all metals take on this peculiar state; that the electro-tonic state is altogether the effect of the induction excited, and ceases with the inductive power; that this state appears to be *instantly* assumed, the force brought into action at the instant of its assumption being merely impulsive.

The author considers that the current of electricity which induces the electro-tonic state in a neighbouring wire, probably induces that state also in its own wire, and that this may be the case with fluids and all other conductors; and concludes that if it be so, it must influence voltaic decomposition and the transference of the elements to the poles. Should facts be found to accord with these views, we consider the author fully justified in his anticipations of the importance of his discovery as applicable to the decomposition of matter, and we certainly feel that the discovery could not have been made by any one more likely to decide this question, or more able to avail himself of a new principle of decomposition when discovered.

In the series of actions proceeding from the voltaic battery which this discovery exhibits to us, a very curious succession is observable. Volta-electricity passes along the connecting wire of the battery,

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Mr. Faraday and Mr. Christie with this magnet, by the very means which, at this time, failed, in consequence of the two contacts not taking place at the same instant, on which circumstance the success of the experiment appears entirely to depend.

electro-magnetism at right angles to it. By this means the cylinder of soft iron, within the helix into which the connecting wire is formed, becomes a magnet. If the poles of the magnet be joined by an iron bar, ordinary magnetism passes along this bar, but magneto-electricity is induced at right angles to it in a helix wound round it. And again, magneto-electricity is propelled along the wire, and magnetism is induced in a steel bar at right angles. This bar may again induce magneto-electricity in a wire at right angles to it, by which another bar may become magnetic; and so on, showing a repetition of similar powers successively brought into action, but their efficiency at each step greatly diminished.

The effects hitherto described were due to a momentary action; in order to obtain continuous action the author applied the principle of circular motion. For this purpose a thick copper disc was made to revolve near the magnet, so that a portion near its edge passed between the ends of two bars of iron which concentrated and approximated the poles. The edge and a portion round the centre of the disc were well amalgamated: an amalgamated conductor was applied to the edge of the disc near the poles, and with this, one end of the wire of the galvanometer was connected, the other end being connected with the centre of the disc. While the disc revolved, the needle of the galvanometer was permanently deflected at least 45° in one direction; and when the motion of the disc was reversed, the permanent deflection was in the opposite direction.

When the disc revolved horizontally in the direction of the sun's daily motion, the unmarked pole being beneath the disc and the marked pole above, it appeared, by the indications of the galvanometer, that positive electricity was collected at the edge of the disc nearest to the poles: if the marked pole was below and the unmarked pole above, then negative electricity was collected at that part of the disc: and if in either case the direction of the motion was reversed, the nature of the electricity collected at the same place was also reversed.

The experiment being made in a still more simple form, by passing a plate of copper longitudinally between the poles of the magnet, it appeared that positive electricity was collected on one edge of the plate, and negative on the opposite; and if the plate was passed in the contrary direction, then the electricities on the edges were reversed.

When a wire was passed laterally between the poles, similar results were obtained.

The law according to which the electricity excited depends upon the pole of the magnet near which a wire moves, and the direction of its motion, although not so expressed by the author, appears to be this: Let the wire revolve parallel to itself about a bar magnet, so that its centre coincides with any curve;—for example, (in order to mark more readily the points where the direction of the current of electricity changes), with an ellipse, the major axis of which coincides with the axis of the magnet, and the minor axis passing through its centre;

let the wire be inclined at any angle to the plane of the ellipse, which in the first instance we will suppose to be horizontal, and that the marked end of the magnet is pointing north; and let the wire move parallel to itself in the direction of the sun's daily motion; then while the wire revolves from the *western* extremity of the axis minor round the *marked* pole to the *eastern* extremity, the electric current will be from the end of the wire *below* to the end *above* the orbit: while it is revolving from the *eastern* extremity round the *unmarked* pole to the *western* extremity of the axis minor, the current of electricity will be from the upper to the lower end of the wire; and whatever position the plane in which the wire revolves may take by revolving about the axis of the magnet, or whatever may be the position of this axis, still the current of electricity will be from the end of the wire in the same position, relatively to the plane of revolution, as before. If the direction of the motion be reversed, the direction of the current will likewise be reversed.

It would follow from this, that if two wires parallel to each other, on opposite sides of a bar magnet, and perpendicular to its axis, be moved along the sides of the magnet in the same direction, the currents of electricity in them will be in opposite directions; and hence we may draw this important conclusion,—that there must be some internal arrangement in a magnet, whether of currents or of particles, which renders the same absolute motion, a motion in contrary directions relatively to such arrangement on the opposite sides of the magnet.

From all these experiments the author concludes, that when a piece of metal (and the same may be true of all conducting matter,) is passed either before a single pole, or between the opposite poles of a magnet, electric currents are produced across the metal, transverse to the direction of motion; and which therefore in M. Arago's experiments approximate towards the direction of radii. Assuming the existence of these currents, he satisfactorily accounts for the phænomena observed in these experiments and in those by Mr. Babbage and Sir John Herschel. Thus, the disc revolving in the direction of the sun's daily motion beneath the marked pole of a magnet, currents of positive electricity set from the central part towards the circumference near the pole, and the action of these currents is to move the pole also in the direction of the sun's motion; so that the magnet, if at liberty to revolve, will move in the same direction as the disc.

Electric currents similar to those produced by passing copper between the magnetic poles, were produced by iron, zinc, tin, lead, mercury, and all the metals tried. The carbon deposited in the coal-gas retorts also produced the current, but ordinary charcoal did not; nor could any sensible effects be produced with brine, sulphuric acid, or saline solutions. Although the author succeeded in obtaining a continuous current of electricity by means of the revolving disc, yet he was not able, by this means, to produce any sensation upon the tongue, to heat fine platina wire, to produce a spark with charcoal, to

convulse the limbs of a frog, or to produce any chemical effects. That he should have failed in obtaining these most striking effects of electricity, we attribute to the feebleness of the electricity excited, and feel assured that by adopting means greatly to increase the intensity, all these effects will result from the electricity derived from ordinary magnetism.

The facts contained in this paper of Mr. Faraday's, and the conclusions which he draws from them are so important, that we feel we should not have done justice to the communication, had we not given an abstract of the whole, at the same time that we stated our opinion of its value. Had the author's discovery consisted alone of the simple fact, that steel may be magnetized by a distant magnet, in a manner similar to that employed with the voltaic battery, we should have considered it of the highest importance in the inquiry concerning the connexion between magnetism and electricity; but when we see permanent effects which, hitherto, have only been derived from electricity, now derived from the common magnet, by calling in the aid of motion, showing clearly that electricity can thus be excited; and find that the laws which govern the phænomena are established, we cannot but entertain hopes that a door has been opened through which may at length be discovered the precise distinction between two agents which in many respects so greatly resemble each other in their effects and in their laws of acting. Such being our opinion of the results obtained by Mr. Faraday, we can have no hesitation in recommending most strongly the publication of his paper in the Transactions of the Royal Society.

(Signed) S. H. Christie.
J. Bostock.

Lond. and Edin. Philosophical Magazine, July, 1832.

BOTANY AND NATURAL HISTORY.

Different Epochs of the Elevation of the Pyrenees.—The memoir of M. Reboul on the Pyrenees having been read to the Geological Society of France, the 5th December, 1831, M. Dufresnoy made the following observations.

He has recognized, in travelling with M. de Beaumont in the French and Spanish Pyrenees, that there exist in these mountains four directions of elevation. The oldest followed immediately the formation of the transition strata. The second took place between the deposition of the green sand stone, or rather the older chalk and the upper deposition of cretaceous strata. The hills cut by the defile of Pancorbo between Vittoria and Burgos, present a very remarkable example of it: its direction is S. 28° E. the same as that of the system of Mont Viso in the French Alps. The third is subsequent to the chalk system; it stretches from W. 16° N. to E. 16° S. Finally, the fourth, which has given birth to the ophites, gypsums, and sal-

gem, is of a still more recent origin than the tertiary formations: its direction is nearly W. 12° S. E 12° N. similar to that of the principal chain of the Alps. Notwithstanding these four directions, the traces of which may be observed in many valleys; it is still true, as was announced by M. de Beaumont, that the chain of the Pyrenees owes its actual *relief* and its general direction, to the third system of elevation, that which is posterior to the chalk strata, the two first having been modified by the elevation of the chain. As to the fourth, it is perceptible only in these places where the ophite has been discovered.—*Annales des Sciences Naturelles, Janvier,* 1832.

Heights of Mountains and Lakes in North America:—

Long's Peak Chippeweyan, or Rocky Mountains,..	15,000 feet.
Mount Washington, N. Hampshire,*	6,234
Mansfield Mountain, N. Peak, Vermont, ...	4,279
Catskill Mountains, Round Top, N. York, ...	3,800
Black Hills, Lat. 40. NW. of Missouri, ...	3,500
Alleghany Mountains, in Virginia, ...	3,100
Ozarc Mountains, west of Mississippi, ...	2,250
Wisconson Hills, S. of Lake Superior, ...	2,250
Catskill Mountainhouse, N. York, ...	2,214
Sources of streams tributary to Lakes Winnepec and Superior,.....	1,200
Head Waters of the Mississippi, ...	1,200
Break Neck, near West Point Foundery, ...	1,187
Rainy Lake, SE. of the Lake of the Woods,.....	1,100
Tourn Mountain, Rammapoo, N. Jersey, ...	1,067
Lake of the Woods, ...	1,040
Dog Lake, ...	1,000
Source of the Miami, ...	964
Source of the Sciota, ...	919
Sources of the St. Peter and Red Rivers, ...	830
Mouth of the Platte, Missouri, ...	680
Mouth of the St. Peter, Mississippi, ...	630
Lake Winnepec, ...	595
Lake Superior, ...	571
Lakes Huron and Michigan, ...	571
Ohio, near Wheeling, Virginia, ...	565
Lake Erie, ...	565
Ohio, at Cincinnati, ...	414
Point Levi, opposite Quebec, ...	310
Mouth of the Ohio, ...	300
Lake Ontario, ...	231

Featherstonehaugh's American Journal of Geology.

On the Gold, Silver, and Platina of Russia.—The annual pro-

* This is the loftiest of the White Mountains.

duce of silver in the Russias, is estimated at about 1000 pouds, of forty pounds each; but what, after all, is this 1000 pouds, or 40,000 pounds, to the produce of the Valenciana mine in Mexico, which for many long years produced its millions of dollars annually? Young Demidoff had not yet returned from Italy; from his relation and agent Daniloff, I met with every attention. His cabinet contained many beautiful specimens of platina, most of which were designed as presents to the crowned heads of Europe. Although some single masses of platina weighed seven or eight pounds, none could be compared to those in the cabinet of the mining corps, one of which weighed about 27 pounds. My own specimens, which were presented to me by Zobolefsky, although weighing 800 grains each, and of which I had been not a little proud, dwindled away in the view of the great varieties lying in profusion in Demidoff's cabinet. Owner of the most celebrated platina deposits, and gold-washings, he had had many opportunities, in the course of a few years, of selecting and putting aside not only large massive lumps of gold and platina, but what was yet more interesting, a great variety of most beautiful and perfect crystals of gold. The mass of platina before alluded to, as weighing 27 pounds, was found completely isolated, and at nearly 60 versts from the usual deposits of platina, in a bed of red clay, where some slaves were employed in making bricks. Those streams in the beds and on the banks of which the gold deposits are met with, contain more of gold, and less platina, on the European than those on the Asiatic side of the Ural Mountains. The amount of gold obtained from these washings, had amounted for the year 1830, to nearly half a million sterling. It may be well imagined to what an extent their operations must be extended, when the 100 pouds, or 4000 pounds weight of soil, seldom yield above 65 grains of gold, and varies from 65 to 120 grains,—which is there considered rich,—to the 100 pouds. Nevertheless, their mining operations are conducted with such skill and success, as even to obtain, of this limited quantity, nearly the whole amount; and that, too, with such little cost, as to have been, indeed, far beneath my expectation. Of the simple and yet beautiful processes made use of in the gold-washings of the Ural Mountains, I shall speak hereafter, well convinced of the great utility and service which they would be of, if made known to the mining regions of other countries. The Demidoffs, Davidoffs, and many other Russian families, are acquiring princely revenues from the employment of their slaves in these gold-washings; but it is not alone the gold,—the platina itself is another great source of their prosperity; more especially since all the platina is now coined at the imperial mint, and established as part of the current coin of the realm. The coins made of platina are beautiful; those large pieces with the head of the Emperor are the best, and show better the effect and polish which coins of this metal can take. Though many hundred pounds weight of platina are coined monthly, into pieces of 11 and 22 rubles, they disappear rapidly from the circulation. They may be met with occasionally, and a few at a time, in the hands of the bro-

kers. I consider their price much above the London price of malleable platina, which is at present about 25 shillings English per ounce: considering that the crude platina is the produce of the country, the Russian price for malleable platina, which is about 28 shillings, is too extravagant; and yet this does not arise from the expense of manufacturing, but from the cost of the material itself, which is far higher than the platina of South America. The cause of this is the monopoly and easy disposal of it, at a high price, through the coinage. *Jamieson's Journal, July*, 1832.

ANATOMY AND PHYSIOLOGY.

Biographic Memoir of Cuvier.—George-Leopold-Chretien-Frederic-Dagobert-Cuvier, was born at Montbeliard,* the 25th August, 1769, a year memorable for the birth of Napoleon, of Schiller, of Walter Scott, of Canning, and of Chateaubriand.

Cuvier received from nature one of these extraordinary and privileged developements of brain, the source of that high intellect, destined to enlarge immensely by the works of his genius, the circle of human knowledge; he was one of these superior spirits for whom study is the most powerful want, and to whom intense reflection is facile and recreative. Educated in the Lutheran religion (his father being an officer in the Swiss service), at three years' old he read with accuracy and quickness, and at fourteen he had finished his humanities in the most brilliant manner.

Having failed in gaining the privilege of gratuitous entrance to the University of Tubingen, granted by public examination, he was obliged to renounce the ecclesiastical state, and although profoundly grieved at the prospect of abandoning his studies, he prepared to enter into military service, when the Prince of Wirtemberg, by obtaining his admission to the military school at Stutgard, restored to him all his hopes, and made him reparation for the injustice which was generally considered to have been done him at the examination.

Cuvier laboured hard to profit by the extensive system of instruction, which was acted on in the school. Devoted to the study of law, he however manifested such a predilection for natural history, that he employed his leisure hours in painting insects, or in composing an herbarium; these were his first labours, which showed that he was of a judicious and methodical term of mind, and announced the future accurate and observant naturalist.

Having left the Stutgard school at the age of eighteen years, and

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* In 1769, the town of Montbelliard was the capital of a county belonging to the Duke of Wirtemberg; at present it is the chief place of a sub-prefecture in the department of Doubs.

being destitute of money, he was happy to accept, in Normandy, in the house of the Count d' Hericy, of a place as teacher, which allowed him to consecrate a great portion of his time to natural history. At this time the laws of crystallization having been fixed by the modest and philosophic Haüy; the organic relations which connect the races of vegetables having been well appreciated by the celebrated De Jussieu, both mineralogy and botany were submitted to classifications, which enabled them to rank among the exact sciences. Zoölogy alone had remained stationary since the time of Linneus. Exiled to a remote part of Normandy, Cuvier profited by the proximity of the sea to study its productions, he soon recognized that zoology had not undergone any important modifications, only because the systems adopted up to that time, not being founded on the natural relations deduced from the study of the organs, were arbitrarily arranged; he felt that this science should undergo a complete and indispensable reform, for which immense labours would be required: he knew his own strength and capacity to undertake them. Directed by this truly philosophic spirit, his first researches were so remarkable, that Geoffroy Saint Hilaire, then a young naturalist attached to the Museum d'Histoire naturelle, recognizing in them the stamp of genius, made the most pressing and friendly efforts that Cuvier should go to Paris, to deliver himself up totally to science, in the midst of the rich collections of the museum. He did go, and these two philosophers cemented the union by publishing together many memoirs on the classification of the Mammalia, and two volumes in 8vo., which appeared in 1804 under the title of Menagerie du Museum d' Histoire naturelle, by Lacepede, Geoffroy and Cuvier.

In 1795, Cuvier then aged only 26 years, read to the Society of Natural History a memoir, on a new division of the white blooded animals, which Linneus had united and confounded in the class of vermes. The classification which the author had adopted was so judiciously deduced from the most extensive anatomical researches, that all his late labours on this part of natural history have but served to develope and perfect it.

By a work of such importance, Cuvier at once placed himself in the first rank among naturalists. From that time, all scientific establishments, all philosophic societies, solicited the honour of possessing him. In the same year he became Professor to the central Schools of Paris, Professor to the Museum, as assistant to Mertrud, whom great age prevented from continuing his course of comparative anatomy, he was a member of the National Institute (Academy of Sciences) from the time of its creation, and became perpetual Secretary to the Academy in 1803.

Cuvier had to complete his system of zoology, a task which he fulfilled in an elementary form, published in 1798. This tabular view, drawn up for the central schools, may be considered as the plan of "*Le Regne Animal disbribué d'apres son Organization pour servir a l'Histoire naturelle des Animaux et d'Introduction a l'Anatomie comparée,*" a work of which the first edition in four volumes 8vo.

appeared in 1817, and the second, in five volumes, in 1829 and 1830.

In the years from 1800 to 1805 his lectures on comparative anatomy were collected and published in four volumes 8vo., by MM. Dumeril and Duvernoy. In this important work the facts which had directed the author in his zoological classification are consigned.

Called to the College of France to succeed in the chair of Natural History the illustrious Daubenton, who died in 1800, Cuvier reunited in a high degree all the requisite qualities of a Professor. To an animated, but pure and simple language, he united profound knowledge, accuracy of reasoning, justness of judgment, and that elevation of view which enabled him to perceive the extent of relation to which the sciences give origin: with such a lecturer who possesses true eloquence, all understandings are improved, science becomes comprehensible by all.

Cuvier still pursued his scientific conquests when a circumstance occurred, which proved, how positive and extensive his anatomical knowledge was; with what astonishing sagacity this profound physiologist had appreciated the relation of dimension and of form, which was suitable to each species of animal for the exercise of its organic and instinctive functions.

Bones, broken, of irregular forms, or of immense size, which during thousands of years, had been scattered and buried in the bosom of the earth, in consequence of cataclysms, or of great revolutions of the globe, were preserved in the cabinets of the curious, who attributed to them fabulous origins. Having become the objects of the particular study of Cuvier, he applied to them his system of zoological classification, compared them, collected the bones which should belong to the same species, and supplying what was wanting by that which ought to be, he succeeded, by fair force of genius, to reconstruct entire skeletons of animals that had disappeared from the surface of the globe. The creator of the natural history of fossil animals, which he could describe even to the habits which living they had possessed, Cuvier published these surprising results under the modest title of *Recherches sur les Ossemens Fossiles des Quadrupeds*, (4 vols. in 8vo.), a first edition of which appeared in 1812, and a second from 1821 to 1823. In consequence of the mutual dependance of one branch of knowledge on another, these fossils became the most incontrovertible witnesses with regard to the revolutions that our earth has undergone. In 1816, he published a memoir on the History and the Anatomy of the Molluscæ, (1 vol. in 4to.) In 1830, together with M. Valaniennes, a distinguished naturalist and his pupil, he commenced the publication of a natural history of fishes, (5 vols. in 4to. have already appeared); at his death-bed, Cuvier put into the hands of M. Valaniennes all the materials necessary for the continuation of this great work, and has charged M. Laurilland a well known naturalist, and also a former pupil of his, with the publication of his unedited works on the Mammiferæ.

As a literary man, the works of Cuvier prove that he was a beau-

tiful writer. He did not labour so much as Buffon to polish his style, for his occupations as a naturalist occupied his time. It was in his academical eulogiums that he distinguished himself as a man of letters; in these eulogiums, where, for beauty of style, he showed himself the rival of Fontanelle, the fineness, the delicacy, the amiable satire with which he portrays the tribulations of the philosopher and the little originalities of his character, is particularly to be admired; by this ingenious stratagem he succeeded in captivating the attention of an elegant auditory, which the mere enumeration of important labours would only tire. The *Eloges Historiques des Membres de l'Academie*, pronounced up to 1819, are published in 2 vols. 8vo. These eulogiums, his *Rapport Historique sur le Progres des Sciences Naturelles, depuis* 1789, and his knowledge of ancient and modern languages, opened to Cuvier the gates of the Academie Francaise, and obtained his admission as a Free Associate of the Academy of Inscriptions, and of Belles Lettres.

As a politician, General Buonaparte, his colleague at the National Institute, having appreciated his immense knowledge, intrusted to him the most important functions of public instruction. He was nominated successively Commissioner for the Formation of Lyceums, and Titular Counciller of the University. Under the elder and younger branch of the Bourbons, Cuvier became Master of Requests, Counciller of State, and President of the Council of Public Instruction. In all these offices he showed, as administrator and legislator, the same depth of knowledge that he had evinced as a naturalist. His powerful memory, his conciseness, the clearness of his style, and his accurate judgment, rendered him capable of resolving the most arduous political or administrative questions.

It was at the College de France, the 8th May, 1832, that the eloquent voice of Cuvier was heard for the last time. Than in the resumé which he gave of his course of the preceding year, and in the exposition of that which he then commenced, the force of his powerful talents never was more felt.* He had been so animated by his subject that, at the termination of the lecture, he was covered with perspiration: hurried by business, he exposed himself too quickly to the air, and caught a fatal cold. The third day (10th May) paralysis came on, which, having commenced in the œsophagus, gradually propagated itself to the limbs, and then to the trunk.

As an experienced physiologist, he, from the beginning, was aware of the danger of his illness; his courage alone made him submit to the action of violent remedies which he knew to be useless, but which his attendants employed, in the hope of protracting so valuable

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* In the commencing course, Cuvier was to treat of the Progress of the Natural Sciences in the 19th century, and to elucidate many questions relative to the Philosophy of the Sciences, particularly those concerning the production of organized beings, and relative to the application of anatomy to the determination of their fossil remains.

a life. When he saw his end approaching, he made all requisite preparations with the calmness of a great mind. He employed his last moments in calming the extreme grief of his friends, and of his wife.

The 13th May, at 10 o'clock P.M., Cuvier was dead.

On the Structure of the Crop in the Percnopterus Jota, by M. Lund.—In dissecting this variety of vulture, I was astonished to find in the crop an opening large enough to admit the finger. Although the borders of the opening appeared in a perfectly healthy condition, yet I was inclined to regard it merely as a pathologic appearance, until I would ascertain the fact by the dissection of other specimens. However, I was obliged to leave the country a few days afterwards, without having had such opportunity. Happily I since met with one, owing to the kindness of M. Rudolphi, who was good enough to examine along with me the intestinal canal of this bird, which is the splendid cabinet of comparative anatomy at Berlin, and we found, in that specimen, exactly the same conformation. I think that I may, therefore, describe this peculiar conformation as the normal state, although I am totally unable to explain the office it fills in the animal economy.

The swelling of the œsophagus which forms the crop exists at the anterior portion of the canal, and near the middle of its length; it is, like the rest of the œsophagus, marked by numerous well pronounced longitudinal folds, which, in it, are in a right line, but on arriving at the crop, these folds take a serpentine course, and are particularly numerous to the left of the opening. This opening is at the anterior face of the crop, where it presents the greatest prominence: in the individual now before me it does not occupy exactly the middle, but is a little to the right side, it is nearly orbicular, being 12 millimetres in breadth, and the same in length. The left side presents a kind of swelling, formed by a fold of callous skin, or of the epidermis that lines the inside of the crop, while the left border is formed by a very thin membrane, which manifestly is a continuation of the same epidermis, which grows very thin, and extends so as to form a kind of rudimental valve: this valve would easily allow the exit of substances coming from the right to the left. It is impossible, seeing the regularity with which these edges are formed, to imagine that it could have originated from an accidental laceration, and M. Rudolphi, after a careful examination, has arrived at the same conclusion with me.

As to the two other parts of the stomach, the ventriculus succenturiatus, and the gizzard, they do not present any thing remarkable in their structure. It will be of extreme interest to examine how far this structure, or any approach to it, prevails in any other species of the class of birds to which the one under examination belongs.—*Annales des Sciences Naturelles, Mars,* 1832.

On the Respiration of the Inferior Animals.—The following are the conclusions deduced from several experiments made with

great care and accuracy, by G. R. Treviranus, on the respiration of the inferior animals:

1. The production of carbonic acid-gas during their respiration, depends on the temperature of the medium in which they are placed; on the strength of the individual; and on the frequency and violence of its voluntary motions.

2. The absorption of oxygen is not always proportional to the excretion of carbonic acid-gas: it is certainly, in general, increased and diminished under the same circumstances; but its proportion to the other depends on the strength of the respiration, the time of its continuance while the respirability of the air is diminishing, and the volume of the air in which the respiration is performed. The more carbonic acid there is developed while breathing in the open air, and the less the power of continuing in a medium deficient in oxygen, the less is the proportion of the consumption of oxygen to the production of carbonic acid-gas, when a small quantity of atmospheric air is respired for a moderate period. But when the respiration is continued for a longer period in the same air, and the strength of the individual begins to sink, the excretion of the latter diminishes more rapidly than the absorption of the former. We know that the higher classes of animals, when enclosed in a certain quantity of air, die long before all its oxygen has been exhausted. The case is very different with many of the *mollusca* under the same circumstances; for they not only consume all the oxygen, but actually continue afterwards to expire carbonic acid-gas: consequently, after the respiration has been continued for some time, there has been more of the latter excreted than there has been consumed of the former; nay, sometimes this occurs even before all the oxygen has been consumed.

3. The volume of the respired air generally remains unaltered. In some cases, where it was diminished, the portion missing had evidently been swallowed; in others, it must have been decomposed and absorbed.

4. When the volume of air remained unaltered (as it mostly did) there was always either more or less oxygen consumed than carbonic acid produced. The fact of the volume continuing the same under these circumstances can only be accounted for by supposing the secretion or absorption of some other gas, which could have been no other than nitrogen. In some cases there was even far more nitrogen than carbonic acid excreted.

5. Insects transpire as well as the higher orders of animals. In one experiment, an humble bee lost in this manner the 17th part of its weight in 48 hours.

6. From a comparison of these experiments with those of others on the respiration of amphibia, fishes, and warm-blooded animals, it appears that, while the cat breathes stronger than the guinea-pig and the rabbit, and the dove stronger than the cat; the bee, even at a temperature of 11½° R., produces almost as much carbonic acid in proportion; and at a temperature of 22° R., far more. A butterfly, even after having been for some days without food, excretes a

still greater quantity, at a temperature of 15° R. Earth-worms and snails, at a temperature of 11° to 17° R., fall short of the warm-blooded animals in this respect, but equal the toad, and exceed the tench.

7. If it always held good that the degree of animal heat varies as the quantity of carbonic acid-gas produced during respiration, the bodies of bees and butterflies should be greatly heated when their respiration becomes stronger; however, it is not; being the case only when an inconsiderable quantity of nitrogen is produced at the same time. The former has a less, and the latter a greater capacity for caloric than oxygen. Consequently, if a great quantity of nitrogen is excreted along with the carbonic acid, the caloric that escapes at the developement of the one, must become latent again at that of the other. Now, insects often expire not merely as much, but even twice as much nitrogen as carbonic acid.

8. From computing the weight of the carbonic acid and nitrogen that is developed, and of the oxygen that is consumed, in a given time, and comparing that of the two former with that of the latter, we find that the weight of what is taken in, exceeds that of what is given out; but by so small a quantity that the mass of the body cannot be sensibly increased by it. The loss by transpiration, however, much more than compensates for this, particularly in the higher classes of animals.

9. This comparison of the loss and gain of ponderable elements during respiration leads to another, and a very striking result. In one of the experiments, a butterfly weighing two grains, which had previously been upwards of three days without food, gave out in 90 minutes 0.0078 gr. of carbonic acid-gas, which contained 0.0022 gr. of carbon. Now, supposing it to have breathed in the same manner for the three preceding days, it must have lost 0.1 gr. carbon; but it had been breathing so much stronger, that the loss may be estimated at, at least, 0.15 gr. The hard parts of the insect could have had but little share in this; and as they weighed in another of the same size, which had been well dried, 1.4 gr., the weight of the soft and more vital parts can have been but 0.6 gr. However, allowing it to have been 1 gr., the half of that, at least, was water, and the remainder consisted chiefly of albumen, fibrine, and fat. These may have contained about 60 per cent., that is 0.3 gr. of carbon, while there were 0.15 gr. excreted; consequently, the soft parts had lost the half of their carbon. Notwithstanding this, the butterfly was still so strong after the experiment, that it could, probably, have lived for some days longer without food. It follows, therefore, either that life does not depend on the existence of the organic elements in fixed and definite proportions, or that animated matter must have a power of generating carbon.

On the Re-production of Nerves, by Tiedmann.—It is a well known fact that nerves, after having been cut through, have the power of uniting and growing together again. The phenomena ob-

served in this process are the following. In the first place, the ends of the divided nerve recede from each other, so as to leave an interval of from about two to six lines, or more, between them: this is more striking in great than in small nerves. It does not depend on their elasticity, as some have imagined, but on the organic contractility or tonicity of the neurilema, and of the surrounding and connecting cellular tissue. The proof of this is, that the same phenomenon does not occur in the dead body on dividing the nerve. In consequence of the irritation produced by the division, inflammation soon sets in, and the nerves assume a red colour and become thickened, generally for the space of from half an inch to an inch from the point of section. These appearances are more remarkable in the end connected with the nervous system than in the other. Coagulable lymph becomes deposited around them, and minute vessels appear in it. In consequence of the inflammation, and of the effusion of lymph into the cellular tissue around the general sheath and between the partial sheaths, a swelling or knot is produced on the ends of the nerves, that on the upper end being the largest. Similar bulbous swellings are found on the ends of nerves divided by the amputation of a limb. After a few days the separated ends become connected by the effused plastic lymph, which gradually assumes a firmer texture, and shows less blood in its vessels. The bulbs gradually approach each other, and at last unite; and thus the connexion between the parts of the divided nerve is restored. On examining the swelling some time afterwards, it is found to be of a bright or greyish-red colour externally, and white in the centre; and medullary fibres are seen passing through it and completely connecting the nerves. The knot remains for a long time after the cure has been completed. It has been found 50, 60, 90, 100, 110, and even 185 days after the division of the nerve. The author observed it in dogs two years after; and in the human subject six and eight years after amputation of the arm.

It is a question that has given rise to much controversy, whether the substance connecting the divided extremities of the nerves has the true nervous texture, and be capable of conveying sensation to the brain, and volition from it. Arnemann, Breschet, Richerand, Delpech, and others, maintain it to be incapable of conveying the nervous influence; while Fontana, Michaelis, Mayer, Cruickshank, and Haighton, insist that the nervous substance is really regenerated, and that the nerve becomes capable of again performing its functions. Prévost also made some experiments on cats which led to the same result; and Swan came to the same conclusion from his experiments on rabbits and dogs. The preceding experiments certainly go to prove that a true regeneration of the nervous tissue takes place; but none of them are very satisfactory as to the restoration of the powers of sensation and motion to the parts whose nerves had been divided. The author of this paper, consequently determined to make some more decisive experiments on the subject; one of the most satisfactory of which was the following. On the 16th August, 1827, he laid bare the axillary plexus of a dog,

parted the several nerves, and cut out of each a piece of from 10 to 12 lines in length. The animal immediately lost all power of feeling and motion in the corresponding limb. The wound healed in three weeks, the limb continuing in the same paralysed state, andappearing evidently wasted, in comparison with the other fore leg. When the dog walked or ran, it went on three legs, and raised the fourth by means of the muscles of the shoulder.

In May, 1828, that is, eight months afterwards, the author observed that the animal began to use the injured limb again, and that when pinched or pricked with a needle in the paw, it showed some signs of feeling. During that and the following year, the powers of sensation and motion gradually returned, till at last they seemed as perfect as they had been previously. In order to examine the condition of the nerves, the dog was killed on the 2nd June, 1829, twenty-one months after the operation. They were then found to have oval swellings or knots at the points where the pieces had been cut out: those above were larger than those below. Between these swellings, and connecting them, were portions which had been evidently re-produced, and consisted of bundles of white nervous filaments: they were, however, thinner than the rest of the nerve. When laid upon a plate of glass, and moistened with nitric acid, they were not dissolved, which proves that they contained the true nervous substance. This experiment affords a convincing proof that nerves are capable of being regenerated, at least in animals. With respect to the human subject, there are several observations which prove it in an equally convincing manner. Some of these are to be found in Swan, Pring, and Descot. Again, several cases have been recorded in Medical Periodicals, in which portions of a finger that had been chopped off by accident, and united again, gradually recovered their power of feeling and motion after the healing of the wound. Lastly, the well known fact, that those who have had a nerve divided, or even a piece taken out in cases of neuralgia, are often attacked again by their old tormentor after some time, can only be explained supposing by the re-union and regeneration of the nervous tissue. A remarkable case of this description is to be found in Abernethy's Surgical Works.—*Zeitschrift für Physiologie, 4ter Band. 1ter Heft. S.* 68.

Anatomy and Physiology of the Optic Nerves.—M. Ozanam of Lyons, has investigated, very minutely, the origin and course of these nerves, as well in the ox as in man. It results from his researches, that they arise from the centre of the nates, where we can see a small white band, passing from out of a very minute ventricle. In the ox this band arises from the anterior part of the tubucula quadrigemina; it is composed of extremely delicate fibrous fasciculi, which turn round its anterior border of the optic thalamus, and unite to the external corpus geniculatum. From thence the two nerves proceed, growing round gradually as they approach the orbit—they then contract some adhesions to the tuber cinereum.

Having arrived at the sella turcica, they form a kind of H by at first approaching one another, so as to appear confounded together; then they separate, diverging to pass to the globe of the eye. These two nerves which appear united, are however separated by a portion of very thin membrane, which is a production from the dura mater, and forms a kind of sac full of a white medullary substance, of the consistence of cream. One can convince himself of this disposition by placing this portion of the nerves on a tablet of black polished wood, and separating it gradually, after having fixed the four extremities of the nerves. To obtain still greater certainty, M. Ozanam submitted, between two plates of glass, to the solar microscope, the second pair of nerves taken from a subject which had died of acute encephalitis; he had cut the nerves three lines before their entrance into the sella turcica, and six lines beyond that point. The spectre of this portion of the nerves appeared in a proportion of six feet long by three feet broad. Each nerve appeared to be eight inches in circumference, and the intermediate membrane or sac, two feet in breadth. The whole of the image occupied an area of eighteen square feet.

Each nerve appeared formed of an infinity of small fasciculi or tubes, juxta-posed; it was bordered, externally only, by a magnificent fringe, two inches broad. The posterior part of the membrane of junction presented a similar fringe. These fringes did not exist either at the anterior or inferior part of the membrane, nor at the extremities of the nervous trunks; it could not then be an effect of the section made by the scalpel, and moreover, all the parts divided by the instrument were clear and smooth.

It results from this experiment that the optic nerves do not cross in any way on the sella turcica: we may, nevertheless, believe that these nerves have at their origin, if not an actual interchange of fibres, at least a mediate communication by the cerebral pulp and its nutritive vessels. This communication may also take place between the optic nerves in the sella turcica, by this kind of little reservoir of medullary fluid, contained in the membrane described above: for it is to be presumed (says M. Ozanam) that this reservoir, and the fluid that it contains, are not destitute of use.—*Archives Gen. de Medicine, Mai*, 1832.

On the Formation of Pearls.—Dr. Baer of Kœnigsberg, rejects the old hypothesis, lately revived by Sir Everard Home, which represents pearls as originating in abortive ova. The following are the results of Dr. Baer's investigations. 1. In the fresh water muscles of Germany, though true pearls are rare, yet in most of the species which he has examined, he has occasionally succeeded in discovering them. 2. He has never met with them either in the ovaries, liver, kidney, nor any of the internal organs. 3. The pearls were always situated either in or under the skin of the back where it is close to the shell. 4. In the same part of the integuments small coagulated

isolated masses are often observable; exhibiting, however, no traces of organization.

He conceives that the pearls are the result of an ulterior formative process taking place in these isolated amorpheus masses. That comparatively few of them eventually undergo this transformation, cannot be fairly urged as any objection to the truth of his hypothesis. He suggests that those only may ultimately become enveloped with a layer of calcareous matter, which are nearest to the *external surface* of the integuments, the natural organization of which adapts it for such a secretion. This view of their formation is still further supported by the fact of pearls having been found by other naturalists, not merely in the above described situation, but also in free or unattached portions of the integuments, or in the mantle-flaps.

The observations of Reaumur in the Memoirs of the Academy of Paris (1717), as well as those of L. D. Herman, who spent many years in the investigation of this subject, tend to corroborate the opinion of Dr. Baer. Even the drawing given by Home vouches for the correctness of the German physiologist, as the pearls in it are evidently placed in the integuments, namely, in that part of them which is opposite to the heart, and to which the ovary never extends.

It is probable that, in some instances, the little soft masses already alluded to, became coated externally with calcareous matter, thus accounting for the cavity observable in many pearls; whilst in others, on the contrary, they become infiltrated and saturated with the same material, and thus form solid pearls.

That pearls are merely morbid concretions, may, indeed, be considered as having been long since satisfactorily made out: the peculiar merit of Professor Baer consists in directing attention to the soft coagulum which precedes their formation. The thicker the layer of mother of pearl on the inner surface of the shell, the more capable, he conceives, is the individual of converting these coagula into pearls.

There is, he admits, another variety, originating in the presence of foreign bodies, such as grains of sand, &c., between the shell and the integuments, which become enveloped in a layer of pearly matter; and a third species, as is well known, may be generated by boring into the shell, or, indeed, originates sometimes without any external injury, merely in a diseased secretion of the mantle.—*Meckel's Archiv für Anatomie und Physiologie, December*, 1830. *S.* 352.

PATHOLOGY AND THERAPEUTICS.

Application of Auscultation to Midwifery.—In the majority of females, whose pregnancy is advanced beyond four months and a half, and in all during labour, under certain favourable circumstances,

the pulsations of the heart of the fœtus, may be distinctly made out, at least by those who are at all conversant with the use of the stethoscope. We must not be discouraged if, upon our first trial, we fail to recognise the sound of the fœtal heart, and the murmur of the uterine circulation, especially in the early months of gestation: we must repeat our experiments with assiduity and zeal, and our labours will surely be rewarded with results both interesting and important. We must expect to meet with difficulties of various kinds; we have already adverted to the faint obscurity of the sounds in early pregnancy; besides this, an inexperienced auscultator is apt to be deceived by the transmission of murmurs which are not seated in the uterus or its contents. The following is an interesting specimen:

A young woman, whose catamenia had ceased for five months, the abdomen enlarged, the cervix uteri soft, spongy, and flattened, and who stated that she had distinctly felt some motion, as if of the child, was admitted into the "Hospice de la Maternitè." The The stethoscope, applied to the lower and left side of the abdomen, transmitted a distinct noise of double pulsations, the number of which in the minute, was 128. This is a slow pulse for a fœtus of the 6th month, and the physician, therefore, made a memorandum of the case, as rather singular: fortunately he examined the pulse of the young woman at this time, and found it to correspond in frequency with the pulsations heard. The stethoscope was reapplied to different parts of the abdomen, and the double beats were everywhere discovered, and becoming more and more distinct the nearer to the epigastric region that the instrument was put, proving that they arose from the accelerated action of the heart of the mother. On careful examination, no other sounds could be recognised, and the woman was declared not pregnant. The result showed the accuracy of the diagnosis.

The above case shows that the sound of the mother's heart may occasionally be heard over the abdomen, and may easily lead the auscultator into error. The usual number of the pulsations of the fœtal heart is from 140 to 150 in the minute; and this appears to be nearly the same at the different stages of pregnancy. Authors have disagreed as to the accuracy of the last conclusion; but we feel quite satisfied, from the very numerous investigations which we have made, that it is perfectly correct; indeed we have repeatedly observed that the pulse was quicker at the full time than during the sixth and seventh months. It is very remarkable that when the pulsations of the fœtal heart are very distinct, we may frequently recognise a bellows-sound, very similar to what is heard in some diseases of the heart and large vessels—probably it is owing to the meeting of the two columns of blood in the aorta and pulmonary artery.

During a protracted labour the pulsations of the fœtal heart have been observed to have become weak and to intermit, and these phenomena have been deemed by some as indicative of the suffering and danger of the child; but this conclusion is not very tenable, and it would be highly dangerous to assume it as a guide of our conduct,

for often during gestation we find the pulsations to be strong and vigorous at one minute, and perhaps the next they are feeble and faint; and besides we are well aware that the circulation of the child while still attached to and connected with the placenta may be active and undisturbed, and yet no sooner is the child born, but it dies, in consequence of the lungs refusing to act. Now we conceive that the most frequent cause of this *palsy* of the respiratory organs is an injury done to the brain, and thereby to the whole nervous system, during a tedious and severe labour, from the compression of the umbilical cord, and the consequent congestion of blood in the head. A case will best illustrate this view. A woman was delivered by the forceps after a severe labour; the stethoscope indicated the life of the child immediately before it was born, and when the cord was divided, two distinct jets of blood were thrown out; the heart was felt to beat for a few minutes, but no attempt at breathing was made, and the child therefore died.

Dissection showed the cerebral vessels enormously distended with blood, and the substance of the brain, lungs, and liver to be much congested. In similar cases effusions have frequently been detected in the ventricles.—*Arch. Gener., Janv.* 1832.

Disease of Pylorus, cured by Narcotics.—A man, ætatis 57, addicted to excesses in wine and women, had been reduced from a state of comfort to much bodily and mental distress. His earliest symptom was the feeling of a dull oppression in the region of the cardia; to this succeeded a pungent pain, always aggravated by wine or other stimulants. Dyspepsia, pyrosis, and increased flow of a sharp acid saliva, which set his teeth on edge, reduced his strength and flesh amazingly, and so imperfect was the digestion of his food, that it was generally passed in part unchanged; the abdomen was swollen, hard, and elastic, and the bowels were obstinately constipated. He had been in this condition for an year and a half, when he consulted M. Virey in March, 1831:—his appearance then was deplorable—his sufferings, especially at night, very severe, for no sooner did he lie down in bed, than his food was immediately vomited, accompanied with sour belchings, hiccough, and great anxiety; his stomach now could not digest the lightest farinaceous food. Various physicians had been consulted, and various modes of treatment tried, but all to no avail; leeches, blisters, tonics, stomachics, had only aggravated his distress. Every thing indicated the approach, or the actual presence, of organic disease of the pylorus, and the suspicion was strengthened by the lancinating pains felt when the ensiform cartilage was pressed. M. Virey had a most unfavourable opinion of the case.

Treatment.—Warm clothing, with an occasional warm bath to soften the skin, which was harsh and dry; his diet to consist of milk, rice with sugar, white gelatinous meats, and the lightest kinds of fish without any spices. No food to be taken in the evening, in order that the stomach might not be loaded during sleep. By atten-

tion to these rules he improved a little; but still, every now and then, his sufferings returned in all their intensity, from the slightest mental or physical cause. To lull this excessive susceptibility, resort was had to the syrupus papaveris, in doses at first of ʒij. and gradually increased to ʒj. and with much success, for the sickness, belchings, and vomiting ceased, and calm sleep was procured; the medicine, however, lost its efficacy in a few weeks. Opium, in the form of pills, was administered, and a Burgundy-pitch plaster, sprinkled with crude opium, applied to the epigastrium. The patient was better for the next two months; a diarrhœa supervened, which, on the whole, appeared to relieve the symptoms, as the digestion was less painful and imperfect during its continuance. By a steady perseverance in the mild and regulated diet, and in the use of the opium, a complete cure was effected in nine months, and he was restored to strength, cheerfulness and plumpness. It was uniformerly observed, that all tonics and stimulants on the one hand, and, on the other, whatever was enfeebling, invariably aggravated the symptoms, and threatened a relapse.—*Revue Medicale.*

Treatment of Scrofula by Iodine.—M. Baudelocque, Physician "de l'Hôpital des Enfans," communicates an interesting memoir on the results of his practice in strumous disease. Sixty-seven girls, from the age of four to fifteen years, were treated by iodine in its different preparations. In all, the disease had existed for a considerable time, varying from nine years to ten months. Fifteen of these children were completely cured; fourteen so much improved, as to indicate a speedy cure; thirteen experienced less benefit than the preceding, but still sufficient to warrant hopes, though distant, of their recovery; five exhibited little, and twenty no amendment at all. All these patients, with scarcely an exception, were much worse when they commenced the use of the iodine, than at the period of their admission into the hospital. Far from having derived any advantage from their residence there for several months, or even years, their condition was manifestly less favourable. This remark is well worthy our study, as it disproves the assertion of those medical men, who state that scrofula has a definite duration in the system, and that, after a certain lapse of time, it is easily cured, whatever remedies are employed. M. Baudelocque is satisfied, that the length of time during which the disease has existed in any case, had no influence in assisting or in quickening the cure of the numerous patients under his care.

Of the 67 cases, 17 had enlargement of the glands of the neck, jaw, and arm-pits; they took iodine inwardly, and employed likewise ioduretted baths, and friction with ointments of the potassæ hydriodas, plumbi ioduretum, et hydrargyri proto-ioduretum.

The mode in which the discussion of these enlargements is effected, makes us well acquainted with the nature of their formation; they consist of an aggregation of numerous small tumours, united together by cellular texture, which, in course of time, be-

comes firm, and increased in extent. In proportion as this cellular substance is dispersed, and returns to its normal state, the small glands, which are less quickly absorbed, become moveable and disjoined, and these, again, are resolved into several still smaller, until they quite disappear. To prevent the deformity of the scars so frequently left after a scrofulous abscess, the loose skin must be destroyed, either by the knife or by caustic, during the cicatrization of the sore, and a new healthy skin will be formed, so as to cause little disfigurement.—*Revue Medicale.*

Probable Cause of Extra-Uterine Pregnancy.—Madame E., on the 26th Feb. 1817, was suddenly much terrified, *while receiving the embraces of her husband*, by the fall of a stone which had been thrown against the window of her bed-room. She had no family hitherto, trough she had been married for twelve years. The catamenia had regularly appeared till after this date, when the other symptoms of pregnancy presented themselves. On the 13th April, she had a violent attack of bearing down, and of excruciating pain in the left side of the hypogastrium, which very closely simulated the threatening of an abortion. The symptoms gradually passed by, but again returned in two months. On the 6th December all the signs of child-birth came on; but the physician could not, by examining, reach the os uteri with his finger. After a few hours of suffering, all pains left her, and from this moment the motions of the child, which had hitherto been very obvious, altogether ceased. For three months after this date, she had repeated attacks of inflammation in the abdomen, and was reduced to a state of marasmus, when, very unexpectedly, the catamenia reappeared and health was quickly re-established. The belly, however, remained very large. After two years of widowhood she again married, and enjoyed good health till April 1824, when she died from an attack of peritonitis, followed by diarrhœa. On opening the abdomen, the fœtor was insupportable, and M. Beclard, therefore, contented himself by removing the tumour along with the uterus, to which it adhered. The fœtus was of the female sex and of the full size; it was enclosed in a bag situated to the left of the womb, aud was in a great measure converted into a fatty matter, like adipocire.—*Archives Générales.*

Curious Case, in which the real Sex of a Child was not discovered till he was 18 *years old.*—E. D——c. was born on the 13th Aug. 1812, and appeared to be a female, was registered as such, and educated as a girl till 1831. In June of this year she consulted M. Gendrin on account of ophthalmia in both eyes. He was struck with the beard on her face, the bass tone of her voice, and the development of the pomum Adami. The catamenia had not appeared. Subsequently she mentioned that there was an irregularity in the genital organs, and that the irregularity had been increasing ever since the age of puberty, which with her commenced about six years before, as indicated by the change of voice, and the black stiff hair which appeared in different parts of the body. The mother

stated that her child when young had the activity, and had always preferred the sports, of boys, to the quieter amusements of girls.

She has not yet shewn an attachment for either sex. On examining the genital organs, a longitudinal fissure, like a vulva, extended from the inferior edge of the symphisis pubis to near the anus. Rather higher up than the usual situation of the clitoris, was observed a loose cylindrical organ, 15 lines long and about five or six thick, covered by a very fine and extensible membrane, and ending in a regularly formed glans, having a corona round its base. The vena dorsalis penis was seen on its upper surface. A prepuce covered one half of its surface; the skin, of which this prepuce was formed, was continuous with the margins of the vulva-like fissure in the perineum. Along the under surface of this organ was a deep channel, or groove, which terminated posteriorly in the vulva, and at this point of junction were observed 5 open, irregularly arranged orifices, not unlike those of the vasa efferentia round the veru montanum. A smooth mucous membrane covered the surface of this gutter, which was in lieu of an urethra, and it presented faint traces of the longitudinal furrows observed in the natural passage. With much difficulty the finger could be introduced, to the depth of three inches, into the vulva, but no opening was detected in it. A straight instrument might be passed in the direction, from the symphisis pubis to the middle of the sacrum, for three inches and a half; and when the finger was carried up the rectum, the instrument might be felt, and it was ascertained that there was not more than two or three lines thickness of substance interposed. Two elastic roundish bodies were felt by the finger round the supposed neck of the bladder; these were probably the lobes of the prostate. No meatus urinarius could be perceived; but, as the water was discharged downwards, the orifice must have been situated in the perineal canal. At first, this canal was considered to be merely a dilated urethra, but the circumstance of the straight instrument being stopped at the depth of three inches and a half, and not appearing to be embraced by a tight canal, contradicted this idea. By perseverence, however, a curved instrument, directed upwards, was passed into the bladder, and the finger in the rectum did not discover any intervening substance, but the mere walls of the gut and bladder—a thickness of four lines at the most. There was no trace of scrotum, testicle, or of spermatic cord. The mammæ were not all developed. The young person declared that the cylindrical organ, or imperfect penis, was sometimes enlarged and erected, and the erections had occasionally been followed by a discharge of a whitish, thick, viscid fluid. The rami of the pubes and the tubera ischii were more approximated than usual; the hips projecting; the buttocks flattened, and the thighs not rounded, and verging inwards as in females. The mons veneris, the linea alba, the chest, chin and cheeks, and the extremities were covered with hair, and the general configuration of the body was decidedly masculine.

The medical men, after a most careful examination, concluded

that the sex of the person had been mistaken, and the civil tribunal, therefore, ordered that the registry should be altered, and the surname changed to that of a male.—*Revue Medicale.*

Memoir on Chlorotic Diseases.—Dr. Bland thinks that medical men have always taken far too circumscribed a view of these diseases, by considering them simply as symptoms, or as the signal and result of amenorrhœa. "Do we not," says he, "observe them at all periods of life, in the male, as well as in the female sex, occurring too, even although the catamenia are regular; disappearing by the use of proper remedies, although this discharge remains obstructed? The real and specific cause of chlorosis, under all its Protean forms, is a vicious and imperfect sanguification; the blood being defective in crassamentum and colouring matter, and, in consequence, becoming less capable of imparting functional energy to the body. Four weighty reasons are adduced in proof of this doctrine. 1. Chlorotic maladies are almost always brought on either by whatever interferes with, or deranges the assimilation of the food and its conversion into the "pabulum sanguinis," as by living on unwholesome, and inutritious food, or by breathing a corrupted atmosphere, &c.; or secondly, by whatever enfeebles the system of the ganglionic nerves, which, we know, regulate, and keep in health the organ destined to form and to circulate the blood; such as all depressing emotions of the mind, masturbation, excess of venery, sedentery employments, &c. 2. The doughy, waxy whiteness of the skin, the pale lips and gums, the scanty and serous discharges from the vagina, nose, &c., and the watery state of the blood when drawn, all indicate the real nature of the disease, whose progress, 3d, is denoted by an utter want of power and activity in the organic functions of the body, arising no doubt from a deterioration of the fluid, wherein, it is said, that life resides. 4th. The efficacy of steel medicines, which have the power of restoring to the blood the "excitative" properties which it has lost, and which chiefly depend on its colouring matter.

So varied and so unsteady is the occurrence of symptoms in chlorosis, that it is almost impossible to define its characters within a single description. Sometimes the "anæmial" state of the skin, with slight general languor, are its only obvious characters; in some cases is added a lingering and wasting fever, which is not unfrequently attributed to visceral disease; in other examples, are intractable gastrodynia, not to be relieved by ordinary remedies; an asthma which defies all antispasmodics; a general tumefaction of the abdomen, and anasarcous state of the lower limbs; a restlessness and want of sleep, with, or without excruciating headaches, and murmuring noises in the head, against which depletion and counter-irritants are so commonly and so perniciously prescribed; or lastly, symptoms of diseased heart, which equally defy, what Hahnemann designates "antipathic" treatment, are a few out of the many ills and grievances, which have their time, seat, and origin in defective arterialization of the blood.

Dr. Bland, in very strongly recommending the different prepara-

tions of iron in chlorosis, does not assume any merit of discovery; he is well aware that it has been long the medicine in highest repute; but he very justly alludes to its not unfrequent want of efficacy; and is inclined to attribute this to the timidity with which it has been administered, and the improper forms, ill adapted to be received into the system, which have been employed. His favourite formula is thus—

℞. Ferri sulphatis,
Potasse subcarbon, ää, ʒss
Misce; in pilulas 48 dividend:

The dose at first is a pill night and morning, to be increased gradually in a fortnight to 4 pills every morning, noon, and evening.

Among the earliest marks of amendment is the return of colour to the cheeks and lips, and of animation to the eyes; the gastrodynia, want of appetite, sleeplessness, headaches, &c., are quickly much mitigated, or quite disappear. The breathing becomes easier, the pulse less weak and frequent, the strength increases, the anasarca of the limbs abates, and to cheerfulness of mind is added the feeling of bodily comfort and "bien-être."

From the long catalogue of cases enumerated in support of the author's treatment, we shall select the following, one in a female, and two in male patients.

1. A. M. aged 21, had been remarkably pale ever since her birth; but the dirty waxen hue of the skin had increased for the last three years. The catamenia were regular, but very scanty and exceedingly light coloured. The health, however, was tolerably good; and neither the appetite nor the plumpness had decayed. By taking the steel pills in augmented doses for a month, she obtained bloom on her cheeks, lustre in her eyes, and vermilion in her menses!!

2. A. S. aged 57, had laboured under diarrhœa for eighteen months. He was excessivsly weak, and had a constant pain at the epigastrium. The skin, lips, and inside of the mouth were pale and exsanguine; pulse slightly febrile; no organic lesion of the abdominal viscera to be detected: the diarrhœa was checked by opiates; and the steel pills were afterwards continued for six weeks; the patient was restored to strength and health.

3. A. L., 27 years, had suffered from dysentery and ague during the late expedition to Algiers. His skin was blanched, his strength was utterly gone, his feet swelled at night; he suffered from oppressed breathing, and palpitations of the heart, and his sleep was uncertain and disturbed with dreams. No organic mischief was suspected, and therefore the symptoms were deemed chlorotic; the diagnosis was proved correct by the speedy cure under the use of the steel medicine.

It will be observed that the author very properly mentions in all the cases, that there was no organic disease; at least search was made, and none found; for it would be altogether a most dangerous and improper practice that steel should be administered in every case of disease which was attended with pallor of the surface, and of the

mucous membranes, with muscular weakness, and bodily and mental depression, without reference to any other malady which might be co-existent. Every experienced physician knows that these symptoms are every day witnessed in uterine cancers, in chronic gastro-enteritic affections, in indurated liver and spleen, &c.; and neither steel nor any other medicine can minister to such diseased systems the bloom, and strength, and activity of health! But, in uncomplicated chlorosis, long experience has taught him to regard almost as a specific, the combination of the sulphate of iron and subcarbonate of potass.—*Revue Médicale.*

On a peculiar form of Apoplexy, by M. Dance.—A young woman, aged twenty-one, complained at first of a shivering, and of feeling as if she had been well bruised and beaten. In a day or two the symptoms of fever showed themselves, but yet there was no fixed pain in the head. She was bled, and kept on low diet. On the following day there was greater prostration; the pulse was weaker; she complained of pain all over her body, and did not refer it to any particular inward part; her arms, however, if moved gave her much distress and even sharp pain, like that of rheumatism; and when she was provoked by questions, she began to acknowledge that she felt an uneasiness in her head. On the following day slight delirium and general restlessness, with great prostration, drowsiness, inability to protrude the tongue; a purplish red hue of the face; heat and slight moisture of the skin; frequent, full, but feeble pulse; an occasional cough, an almost complete paralysis of the upper extremities; when they were raised, they fell down if not supported, and no effort was made by the patient; the head, if elevated, rolled down again on the pillow when the hand was withdrawn; the urine was involuntarily; she became quite comatose, and died next day.

Dissection.—No serous effusion under any part of the arachnoid. At the posterior third of the left hemisphere near to the course of the longitudinal sinus, was observed a patch of deep red colour, quite circumscribed, and of about the size of a shilling; the cerebral substance, to the depth of two or three lines, was involved in this patch, which appeared to be produced by a softening and breaking down of the substance of the brain, and by being intimately blended with effused blood. When a small stream of water was allowed to play on this patch, an irregular excavation was left, the cerebral matter being washed away; the surrounding substance appeared quite healthy. A few lines distant from this spot, another, not larger than the head of a large pin, was noticed; and when examined attentively, it was discovered to be a minute clot of blood. On other places of the surface of this hemisphere were many more of these black points, in every respect like the former, and all presenting the mixed characters of ramollissement of the brain, and of hæmorrhage, as if small clots of blood had been infiltrated into the softened cerebral matter. This appearance was most conspicuous at the lower and back part of the hemisphere where it rested on the tentorium. On the right

hemisphere, and also on the cerebellum, one or two similar dark-coloured spots were to be seen. The medullary substance of the brain, the ventricles, thalami, &c. were healthy; vessels not gorged. No other morbid appearances in the head, thorax, or abdomen.

Case 2.—A woman, aged twenty-five, entered the Hospice Cochin on the 9th of May. For six weeks previously she had laboured under dropsical swellings of the limbs; and latterly there was general anasarca. After shivering, followed by heat, slight delirium, and drowsiness, symptoms of more decided cerebral oppression supervened; the patient would not or was unable to answer questions; she did not appear to suffer from pain; the heat of skin was somewhat increased, and the pulse was more frequent than in health; tongue natural; abdomen soft and yielding.

Next day the stupor was more complete; but yet she could be roused to open her eyelids and answer questions, though indistinctly; the limbs have lost all spontaneous motion. On the 11th, symptoms worse; dilatation of the pupil; breathing laborious, as if the muscles of respiration had lost their power. The patient died, soon after, comatose.

Dissection.—The surface of the brain and its investing membranes appeared quite healthy; but, on separating the hemispheres from each other, the corpus callosum was seen to be studded with minute red points; it looked as if any white surface had been sprinkled with red paint. On examining these attentively, it was speedily found that they were not produced by simple rupture and effusion, for pressure on the surrounding substance had no effect in squeezing out any oozing of blood; and there was no vestige of clots; their true nature was an intimate blending of the medullary substance of the corpus callosum with the colouring matter of the blood. From their minuteness, it was not very easy to ascertain whether ramollisement, or any alteration of the cerebral matter, was existent or not. With the exception of a few scattered red spots on the left thalamus opticus, similar to those just described, no other morbid appearance was detected any where.

Remarks.—The attack in both cases has been sudden, and the progress rapidly fatal, unlike the instantaneous shock of apoplexy, arising from simple effusion. The embarrassment of speech, the lethargy and coma, increased from day to day, and death soon following to a state of general exhaustion and insensibility, are peculiar. The pathological appearances are to be considered as a sort of diffused capillary hæmorrhage, or circumscribed effusions of blood, which irritate and disturb the cerebral functions, instead of overpowering and oppressing them, as in ordinary apoplexy. Each of the bloody points described above is to be considered as a miniature of the extravasations which we observe so frequently contained in fissures or irregular cavities of the cerebral substance, after apoplectic and paralytic seizures. It is worthy of remark, that both of the narrated cases occurred in young persons, whose blood-vessels are more resisting than in the later periods of life. M. Cruveilhier has alluded

to this form of disease, in the article "Apoplaxia," in the the Dict. Pratiq. de Medicine.—*Archives Générales.*

Treatment of Enteralgia.—We have designated by this name colics of variable nature and intensity, but which appear completely independent of an inflammatory state of the digestive tube, the functions of which are not disturbed. In the greater number of these patients the pains return at regular or irregular intervals; the attacks are sometimes so violent, as to deprive the sufferer of consciousness. In one of the patients which presented the latter symptoms, the pain commenced at the superior part of the loins, and extended over the whole of the abdomen, with a sense of burning in the epigastrium: the access often terminated by abundant eructations. This case and many others that might be cited, have been treated with much success by the sub-nitrate of Bismuth. From three to four grains of this medicine united to magnesia and to very small doses of opium, and repeated frequently in the day, have generally succeeded in curing these cases of abdominal neuralgia, which it is of importance to distinguish from organic diseases of the digestive tube. From the table it appears that of ten cases of this description, nine have been cured by this practice.—*Rapport du Dispensaire de Geneve par D.D. Gosse. Prevost. Dupin et Lombard,* 1830.

Treatment of Dyspepsia and Gastrodynia.—"We reunite these two diseases in the same article, not that we regard them as depending upon the same cause, inflammation, but because their symptoms often become mixed together, and otherwise the treatment of the two affections differ so little, that in separating them we would have necessitated frequent repetitions.

Almost all cases of dyspepsia, and of gastrodynia, are accompanied by alternations of diarrhœa and of constipation; therefore, one of the first indications in the treatment of the two affections is, to put a stop to this irregularity in the functions of the great intestine, which is kept up by that of the digestive functions, by the judicious use of purgatives. The purgatives that are most appropriate, are carbonate of magnesia, and rhubarb; by uniting these remedies in doses varied according to circumstances, we very constantly obtained a great amelioration of the gastric symptoms; occasionally calomel was added when it was wished to favour the biliary secretion, and re-establish the functions of the liver. The calomel acts not merely as a purgative; it appears to possess peculiar properties in bringing the digestive functions to their normal condition; in this respect its action resembles that of blue pill; which last preparation given in the English manner, *i. e.* a three grain pill morning and evening, cures in a short time obstinate dyspepsias.

After the purgative and mercurial plan, the treatment by alkalies has been the most successful. In all cases of pyrosis with acid regurgitations or vomitings, we have employed with advantage, a solution of either caustic soda, or carbonate of soda. The dose is six or eight

drops of caustic soda in eight ounces of water; a tea-spoonful of that solution to be taken three times in the day. The same indications are fulfilled by carbonate of soda, which may be given after meals in the dose of three or four grains, with gum arabic, repeating the prescription every half hour until the cessation of the symptoms.

Another mode of treatment that has been very successful in dyspepsy with obstinate vomiting, is the internal administration of ice. We have given during many hours small lumps of ice rolled in sugar, or in gum, and by that means we have prevented periodic vomiting and calmed dreadful pains.

Of all the medicines that we have spoken of, there is none that we have used so frequently, and with such success, as the sub-nitrate of Bismuth; this salt appears to possess specific properties in calming the irritability of the stomach, we generally order 12 grains of the nitrate with a scruple of magnesia, and a grain of opium: this dose is divided into three powders, of which the patient takes one morning, noon, and night. This mode has succeeded in a great number of cases, of whom some had dyspepsia with vomiting, others mere pains in the epigastric region.

But it is not sufficient to cure dyspepsias and gastrodynias, we should also guard against relapses, which are so frequent in this kind of disease: the slightest errors in diet are inevitably followed by a return of the pains, the nutriment should therefore be light, easily digested, and taken at regular intervals. Besides errors of diet, there is another cause of relapse, against which it is necessary to caution the patients; this is motion of the arms. M. Odier had before remarked the influence of the motions of the arm on pains of the stomach, and we have had frequent opportunities of proving the correctness of his remark. We should therefore recommend to the patient complete repose, unless we should wish to destroy in a few moments, the results of all our labours.

The resumé which we have given of our practice in chronic diseases of the stomach, may serve to demonstrate the falsity of the opinion, which assigns inflammation as the cause of all the derangements of the digestive functions: in fact, the means which in our hands have been the most successful, are precisely those which the partisans of Broussais declare to be incendiary, such as purgatives, emetics, caustic soda, and sub-nitrate of Bismuth: these medicines have been given with the greatest success in cases, where other physicians would have made use of leeches and gum water. There have been, however, many cases in which we had recourse to leeches, blisters to the epigastrium, and diluent drinks with the greatest advantage, but these therapeutic means have not been, and should not be, the only ones employed.—*D.D. Gosse, Prevost, Dupin et Lombard. Rapport du Dispensaire de Geneve*, 1830.

Hydrocephalus cured by Puncture, by Mr. Russel.—Christian Littlejohn, whose age is 8 months, was affected with chronic hydrocephalus. Her mother observed a few days after birth a greater separa-

tion of the bones of the head than natural, after which its size began to increase very rapidly. Eleven weeks after birth, I was requested to see her along with my friend Mr. Moir, Lecturer on Anatomy in this place. By that time the head had acquired an enormous size; it measured in circumference 23 inches, and from the meatus of one side to that of the other, across the vertex, 15¼ inches. There was a constant rolling of the eyes, and squinting, but there was no unusual dilatation of the pupil, which contracted readily on the application of light. The bowels were irregular, and she was affected with slight startings during sleep. Various methods of treatment had been adopted, viz. compression, blisters, mercury, diuretics, &c., but in spite of these measures the head continued to increase. As the general state of her health appeared good, I resolved upon trying the operation which has been recommended, of gradually discharging the water by puncture. The operation was accordingly performed on the 25th August, six days after my first visit. The instrument which I employed was a trocar such as is used in hydrocele. I introduced it about half an inch in depth on the right side of the anterior fontanelle, and three ounces of serous fluid were discharged through the canula. A piece of adhesive plaster was placed over the puncture, and a roller applied round the head. She slept well that night, but next day she was slightly feverish, and continued so for two days afterwards, when she appeared as well as before the operation.

On the 4th day of September, the puncture was repeated in the same manner on the opposite side, and five and a half ounces of turbid serum were evacuated, containing several flakes of lymph. No unfavourable symptom followed. On the 15th September, the size of the head appeared much lessened, and was found to have diminished 2¼ inches in circumference, and 2¼ across the vertex. Ossification had made considerable progress. A large opening in the frontal bone, which extended from the bregma to the nose, was completely filled up, while those in other parts were much diminished. In again using the trocar, only an ounce of fluid was discharged. On the 5th of October, I inserted the trocar near to the part I first punctured, and introduced it as far as the meninges, but only a half ounce of fluid passed through the canula; I therefore re-introduced it, and entered it obliquely, about an inch and a half in the direction of the ventricle, and upon withdrawing it, nine ounces of serum were discharged in a continued stream. The wound was closed, and a roller applied tightly around the head. Immediately after the water was discharged, the pulse became feeble, and she was faint and weak, but during the evening she fell asleep, and awoke an hour afterwards apparently much refreshed. To my great surprise, not one unfavourable symptom followed. The pulse indeed became more regular than it had hitherto been, the startings during sleep were not so frequent, and she appeared in other respects better, with the exception of her bowels, which continued to discharge stools of a dark green colour. She continued to improve for nearly three weeks afterwards, when her former symptoms gradually returned, and an obscure fluctuation could

be perceived by pressing with the fingers above the anterior bregma. Small doses of calomel were administered till the mouth was affected, which shortly produced an absorption of the fluid, and a removal of all the hydrocephalic symptoms. Since then, she has had no relapse, and has enjoyed almost uninterrupted good health. She is a stout and lusty child, and her size uncommonly large for her age. The bones of her head are now complete, excepting the anterior opening, which is closing. The size of the head is less by 4 inches in circumference, and 2¼ across the vertex than it was previously to the first operation. With the exception of Dr. Conquest's two cases, I am not acquainted with another in which the ventricle has been punctured for the relief of water in the head. In the cases of Rossi, and Dr. Vose, the water between the membranes only was evacuated. An opinion is entertained by several, that this operation is not only a very dangerous but an extremely doubtful one. I trust, however, that the result of these cases, will prove that such fears are in a great measure groundless, and that, under favourable circumstances, the chance of cure is such as to justify its performance.—*Edinburgh Medical and Surgical Journal, July*, 1832.

Cure of Amenorrhœa, by Dr. Loudon.—There are but few of the sympathies which exist between the remote parts of the body which so decidedly manifest themselves as that between the *uterus* and *mammæ*. It would, therefore, be useless to point out how many physiological and pathological facts demonstrate this in practice. The father of medicine was not ignorant of this great sympathy, and availed himself of it therapeutically; for in floodings he recommends dry cupping to be practised on the breasts, with the view, no doubt, of causing a revulsion, and exciting a new action in the womb.

Reflecting on this principle, it occurred, that if an action should be induced in the capillary vessels of the *mammæ*, the womb might in other diseases be made to sympathize with these parts. Leeches seemed to be the most likely means of producing this action, and in a case of *amenorrhœa* of two years' standing, two leeches were applied to the lower part of each breast for a month, repeating them on alternate days. In three weeks the *mammæ* swelled to an enormous size, giving a sensation to the patient as if they would burst. About the end of the month menstruation came on, and the young lady is now the mother of two children. Several other cases in which the leeches have been tried, have been followed with the same results, and no medicine has been used excepting an aperient to keep the bowels open.

Although this remedy is submitted to the profession as a very certain means of exciting uterine action in this disease, and is founded both on the principles of physiology and pathology, it is not held up as a specific in all cases of amenorrhœa, and is not intended to supersede, but to be combined with, the other auxiliaries in the treatment of that disease. Hence purgatives, local and general, vapour baths, hellebore, and the other remedies which experience has

pointed out as useful, should not be neglected. Nor is the author of the present notice aware that this practice did not exist at some previous time in the history of medicine, although if it did exist, on what grounds it was abandoned, it is difficult to conceive.—Leeches were used in medicine long before the Christian era; mention being made of them both by Pliny and Galen.—*Edinburgh Medical and Surgical Journal, July*, 1832.

Fungus Hæmatodes of the Cranium, the Lower Jaw, and the Liver.—Catherine K., aged 46, had been subject to epilepsy from her infancy: her general bodily health, however, was not affected by it, as she was able to earn her livelihood by carrying heavy loads. Her intellectual powers were very inferior. In her 44th year, the catamenia ceased, without producing any particular disturbance; but she soon afterwards remarked a small tumour on her lower jaw, to which she paid no attention till it became as big as a large hen-egg, which was about a year before her death. At this period she applied for advice. On examination, the tumour was found to be situated on the right side of the horizontal portion of the inferior maxillary bone. It was of a bright red colour; was firm and elastic; and was neither moveable nor painful; its surface was smooth. On learning that an operation would be the only means of affording relief, the patient went away and did not apply again for nearly six months. The tumour was now found to have increased greatly in size, and to have become very painful. It filled the cavity of the mouth so that the tongue was quite thrust aside: its surface was uneven and knobby, and it had partly grown softer. As it was quite evident that it grew from the bone, it was considered useless to have recourse to an operation. The pain continually increased, and deprived the patient of her rest; and the difficulty of swallowing became greater every day, so that she at last died almost of starvation. Towards the termination of her life, the epilepsy quite disappeared.

On examination after death, the calvarium was found unusually thick; and there was in the right parietal bone a small circular tumour, covered by the pericranium, projecting externally a few lines above the surface, and internally about as much, so as to produce a depression on the dura matter, but not adhering to it. When cut into, it appeared totally devoid of vessels, and its substance resembled that of a firm *crusta pleuritica*. The substance of the cerebrum and cerebellum was sound: in the pituitary gland was a small, bright yellow body, connected with it by thin threads, and of the consistence of coagulated albumen. The tumour on the inferior maxilla consisted of two distinct portions, one growing from its external, the other from its internal surface. The intervening portion of bone was quite destroyed. The organs in the thoracic and abdominal cavities were sound, with the exception of the liver, which contained imbedded in its convex surface two round tumours, about as large as walnuts; their interior was yellowish, and resembled lard.—*Rust's Magazin für die Gesammte Heilkunde*, 1832. *Erste Heft.*

SURGERY.

Case of Extirpation of Tumour with Ligature of Common Carotid, by Dr. Ewing.—John Cock, aged 52, a brickmaker, admitted to the Aberdeen Infirmary with a large tumour situated on the right side of the face and neck, of which he gives the following account. About thirty years ago he received a severe blow on the lower part of the cheek, and next day observed a swelling on the same part about the size of an egg. This did not dissipate, but grew into a tumour, which remained nearly stationary for sixteen or seventeen years. About this time he met with a fall, and hurt his cheek on a stone, after which the tumour increased much in size. Some years afterwards, when at work, he was struck with a bar of iron, which carried off a portion of the inferior surface of the tumour, when considerable hemorrhage took place, and the part did not heal up for twelve months. After healing, however, it increased very rapidly in bulk, and within the last two or three years has been still increasing faster and faster, particularly towards the larnyx. It is firm and slightly elastic to the feel, and has a lobulated appearance. The colour is much the same as that of his face, except on the top of some of the larger lobes, where it has a whitish appearance, and at two or three places the skin is abraded and a watery fluid exudes. When injured he says it bleeds smartly. It extends from the lower part of the ear over the jaw to nearly the cricoid cartilage below, from this it extends backwards and downwards over the side of the neck, and is bounded behind by a curved line running from the lobe of the ear to the edge of the trapezius muscle. It therefore occupies the lower part of the cheek and all the side of the neck, hanging pendulous down to the clavicle. It feels pretty loose and moveable, except below the angle of the jaw, where its attachments appear to be deep rooted. Its measurements are: From behind the ear, obliquely downwards and forwards to near the cricoid cartilage, 15½ inches; from the angle of the mouth, obliquely downwards and backwards to the most dependant part on the posterior surface of the neck, 15½ inches; from a point half-way between the ear and the angle of the mouth, directly downwards over the tumour, 15inches; from a point half-way between the mouth and the cricoid cartilage, directly backwards over the tumour, 14 inches. The greatest circumference of the tumour is 20¼ inches.

The man's general health appeared good, and he was anxious that the tumour should be removed if possible, as, from its weight, it had become a serious impediment to him, and as it was fast encroaching on the wind-pipe. On examining his pulse, it was observed to intermit occasionally, and this at first made me hesitate to operate; but as it was not constant, and as he did not make any other complaint, I thought the operation might be attempted. From the connexions of the tumour, particularly about the angle of the jaw,—from the probabilit

of the vessels being both numerous and large which had fed such a tumour for so many years,—and from reading the account of two similar cases, one by Mr. Goodlad of Bury in the Lond. Med.-Chir. Trans. Vol. vii. and the other by Dr. Stedman in the Ed. Med. and Surg. Journal, Vol. xxxvii., I resolved to tie the common carotid artery as a preparatory step to extirpating the tumour.

11th February. The operation of tying the common carotid was performed in the ordinary manner. But an unusual difficulty presented on account of the tumour encroaching on the line of incision, to obviate which it became necessary, in the first instance, to dissect backwards a part of the tumour, which still impeded the operation by increasing the depth of the wound. As several small vessels poured out blood, the bottom of the wound was obscured for some time, but by clearing it with a sponge and waiting for a little time, the artery was easily secured. In order to expose the artery, I pinched up a small portion of the sheath on the tracheal side of the vessel and opened it with the scalpel, while an assistant drew the outer portion of it towards the sterno-mastoid muscle, and along with it the *par vagum* and internal jugular vein. By this mode of procedure the embarrassment that some surgeons have experienced from distension of the vein was entirely obviated, although, as will appear in the sequel, the vein in this instance was preternaturally enlarged.

The second part of the operation was that of extirpating the tumour, which was accomplished in the following manner. An incision was carried from before the ear along the anterior part of the base of the tumour and joining the wound already made for tying the artery; the tumour was then quickly dissected backwards for about half its breadth, when another incision was carried from behind the ear along the posterior part of the tumour and crossing below to meet the first incision. This incision, however, was made in such a way as to preserve a portion of integument from the posterior and inferior part of the tumour for covering the wound. The relations of the tumour were such as that it could be removed very easily except near the angle of the jaw, where its attachments were very deep. Before it could be removed from that part, it was necessary to extirpate the lower portion of the parotid gland, to which it was closely united, and to dissect it from under the angle of the jaw as far back as the styloid process of the temporal bone, which was completely laid bare.

When the tumour was removed there was a sudden gush of blood from a number of vessels, particularly about the angle of the jaw, where some large arteries required to be tied, notwithstanding the common carotid being previously secured. To give some idea of the size of the wound, it laid bare the lower part of the cheek and the whole of the side of the neck so as to expose the parotid and submaxillary glands, part of the masseter, the digastric, styloid, part of the mylo-hyoid, and the greater part of the sterno-mastoid muscles. The operation was concluded by raising the flap which was preserved, and uniting it to the cheek by a few stitches of interrupted

suture. The whole of the wound was thus covered up except a part of the parotid gland. During the whole of this formidable operation which the patient bore with the utmost fortitude, not above 1lbi. of blood was lost, and when carried to bed he was neither very faint, nor did he complain of much pain. The tumour weighed nearly five pounds. He sank gradually, and died on the 15th.

16th. *Inspection.* 1*st. External Wound.*—Slight adhesion had taken place along the edge of the flap, and when this was torn up, patches of pus were found streaked over the side of the neck where the tumour had been removed. The line of incision made for tying the carotid had also partly adhered; and on cutting deep towards the artery we found that lymph had been poured out and become organized so as to cover the artery. I cut out a portion containing the sheath of the artery, vein, and nerve, and dissected them carefully afterwards. The artery was found to be unusually large, but otherwise healthy. The *vasa vasorum* were seen ramifying very numerously along its surface. A plug of fibrin filled the vessel for nearly two inches below the ligature, and a similar one for about half an inch above it. It was found that the artery was firmly constricted by the ligature, and a little lymph covered the noose so as to fill up the notch made by the thread. The vein and *par vagum* were found undisturbed in their relative situation, and the former seemed unusually large.

2*d. Thorax.*—On raising the sternum, we found a large quantity of fat covering the pericardium, adhesion of left lung to the pleura, and a little pus below the pleura at the upper part of the sternum. On the surface of the left ventricle of the heart there was a portion of false membrane. The right side of the heart when opened, appeared sound. In the left side the mitral valves were a little thickened; and the semilunar valves at the root of the *aorta* very much thickened and corrugated.—*Edin. Med. and Sur. Journal, July*, 1832.

Secondary Hemorrhage after Amputation, by Dr. Allsop.—Cases of severe secondary hemorrhage are occasionally met with, in which tying the main artery at a distance from the wounded part is the only means of effectually arresting the flow of blood.

Under these circumstances, an important question arises; what will be the effect of this operation on the state of the wound? In this point of view, the following case may perhaps be interesting:

7th April, 1829.—Samuel Hursthouse, æt. forty-four, received a severe injury from the falling of a mass of stone, by which the outside of the right leg was laid open for two-thirds of the length of the *fibula*; this bone was denuded, and broken into many fragments. An alarming hemorrhage took place immediately; and, notwithstanding the application of the tourniquet by a surgeon on the spot, a considerable oozing of blood continued during the time taken up in removing him home and obtaining assistance—a period of five hours.

He was at this time found lying in a state of insensibility, from which he was roused with difficulty, with constant twitching of the

muscles; cold and exsanguinous surface; respiration slow and heavy; his pulse fluttering, and scarcely perceptible; in short, in a state of imperfect syncope.

As immediate amputation appeared to present the only chance of saving his life, for blood of a venous hue continued to ooze freely from the wound, augmented rather than restrained by the tourniquet, and as Mr. Adams, of Matlock, the only other surgeon present, agreed with me in opinion, I immediately amputated the thigh at its lower third, forming the double flap.

The patient showed signs of sensibility only during the incisions, and continued in the same state throughout the evening. During the night the circulation became restored, and his appearance next morning was favourable.

In the subsequent progress of this case, the action in the stump was weak and languid; and the retraction of the muscles not taking place until long after the wound had been dressed, from the insensible state of the patient, the lower part of the inner flap formed by the flexor muscles, which are not attached to the bone near the end of the stump became separated from the opposite side; nor could the union of this part of the flaps be obtained, although at the subsequent dressings the greatest care was taken to keep them in close apposition. The upper part of the wound, however, united by the first intention; the attachments of the exterior muscles, and of the *biceps flexor*, preventing their separation; a slight hemorrhage took place on the fourth day, and recurred profusely on the sixth; it was arrested by compressing the artery in the groin, and a firm *coagulum* was formed. After this time the state of the stump improved, better matter was formed, and granulations appeared on the surface of the exposed muscles on the lower part of the stump.

The ligatures came away on the thirteenth day; by the twentieth, cicatrization had commenced on the edges of the skin; and the cavity on the lower part of the stump was nearly filled up by granulations. On this day the roller had been applied somewhat too tightly, producing uneasiness. In the night a very profuse arterial hemorrhage occurred, it was restrained by compressing the femoral artery against the *ramus* of the *pubes*, until the arrival of Mr. Adams, with whose concurrence and assistance I took up the artery where it crosses the inner edge of the *sartorius* muscle.

The hemorrhage was permanently arrested; and though the state of the wound was stationary for some days, it afterwards healed more rapidly than before. In the course of ten days from this operation, there remained uncicatrized only a spot a little larger than a shilling. The further healing of the wound was now, however, protracted several weeks by the exfoliation of a small particle of bone; the irritation of which caused swelling of the inner side of the stump to appear from time to time. This was at length relieved by an incision, and after the discharge of the particle of bone a perfect cure was obtained; the end of the bone being well covered by the parts which had united by the first intention, forming a good stump.

My reasons for preferring this operation to the more common practice of securing the artery on the face of the stump, were the probable return of the hemorrhage if the latter plan had been followed, from ulceration of the vessel, likely to be induced by the irritation and injury occasioned by seeking the vessel amongst parts recently united, in a patient whose powers of reparation had been so greatly weakened; the great difficulty of finding and securing the vessel under these circumstances, and the improbability of being able to obtain for the patient a good stump. These objections did not apply to the taking up of the vessel at a distance, and there appeared to be little reason to fear effects supposed likely to result from cutting off the supply of blood from parts so recently united, because nearly the whole of the divided surface was supplied by branches of the *arteria profunda femoris:* I should not have taken up the vessel at so great a distance from the wound had I not been obliged to consult convenience and expedition, the operation being performed at midnight, whilst the hemorrhage was somewhat restrained by pressure on the artery below Poupart's ligament. On contrasting the results of this operation with the probable consequences of tearing open the stump, I have every reason to be well satisfied with its adoption. I had witnessed a similar practice before, which had been equally successful under far more unpromising conditions.

In the summer of 1827, a young man was brought into the Royal Infirmary of Edinburgh with a wound of the hand, the soft parts between the metacarpal bones of the thumb and *index* finger being lacerated by the bursting of a pistol. In the subsequent sloughing, hemorrhage occurred from a small artery in the bottom of the wound, which it was impossible to tie effectually. The bleeding was restrained by compresses, but recurring frequently, reduced the patient to a state of great danger. At a consultation of the surgeons of this institution, (I believe Mr. Russell, Dr. John Campbell, Dr. Ballingall, and Dr. Cullen,) it was resolved to take up the humeral artery, since tying the radial or ulnar branches would have been ineffectual, from anastomoses with the interosseous artery; and since amputation could but be the last resource, if this attempt to save the limb should prove unsuccessful, yet the probable effect of thus cutting off the supply of blood from a wound in a sloughing state was considered very hazardous.

The operation was performed by Dr. John Campbell; and watching with great interest the progress of the case, I was pleased to find that the influence of thus obstructing the circulation had been overrated. The hemorrhage was effectually stopped. Neither coldness or numbness followed the operation; and the wound proceeded in the most favourable manner to a cure.

In conclusion I may observe that the fear of bad effects from this obstruction of the circulation in such cases has been suggested principally by unfavourable results, where long-continued compression has been employed. Between the state of the circulation induced by the latter method, and the sudden interruption of the current of blood

in the larger artery of a limb, there is not that analogy which at first sight may seem apparent. In the case of continued compression, the venous circulation is obstructed far more than the arterial. When the artery is tied the venous circulation is not affected, or rather is free, whilst the anastomosing branches are found in most cases to be capable of carrying on as much circulation as is necessary to the vitality of the limb, though not so much as is necessary for destructive inflammatory action.—*Edin. Med. and Surg. Journal, July*, 1832.

Fracture of the Neck of the Femur.—The head of the femur has in some rare cases been driven through the bottom of the cotyloid cavity and fairly lodged within the pelvis;—and so firmly has it been impacted in this situation, that even after death, it required much force to displace it. Falls upon the trochanter, and upon the soles of the feet have not unfrequently caused the head of the femur to be splintered, while the cervix was unhurt: but this accident is generally the result of contusions from shot; upwards of a dozen of such cases were seen by Baron Dupuytren in July, 1830.

The most common situation of the fracture of the cervix is not at its middle, where it is weakest and most slender; but at its base, where it is united with the trochanter, which is not unfrequently broken at the same time, and is sometimes completely detached from the body of the bone. Dupuytren advocates the opinion that bony union may and does take place in intra-capsular fractures. Many specimens preserved in the museums of the Faculty of Medicine, and of the Hôpital de la Pitié, he assures us, distinctly prove this. The fracture is sometimes not complete, or the rough projections of the broken surfaces fit so closely to each other, like mortised work, that no displacement takes place for several days or even weeks. Sabatier reports a case, where twenty-two days elapsed, before the symptoms of fracture were apparent. The length of time necessary to the solid knitting of fractured cervix femoris is from 100 to 160 days, during the whole of which period, the extending apparatus must be constantly applied. Dupuytren has more than once seen cases where the provisional callus has given way when the patients were permitted to rise after two or three months; and thus shortening and deformity of the limb were occasioned. We must not always expect to find the foot turned outwards in this accident; the very reverse has frequently been noticed, and Bichat goes so far as to state, that it occurs in the proportion of two cases in ten; a proportion however considerably greater than is warranted by Dupuytren's practice. The eversion of the foot is, in the opinion of the Baron, referrible to the action of the adductor muscles.

In the treatment of this accident, the patient ought to be laid on his back, the thigh bent on the pelvis, and the leg on the thigh; moderate extension may now be used with much advantage, as the muscles, which chiefly resist the adjustment of the two pieces are relaxed by the semiflexed position of the limb; the upper, or outer, or displaced portion is thus easily reduced, and brought in contact with

the lower, or inner fragment; in which situation the object of the surgeon is to retain it. All apparatuses of continued and forcible extension are bad, and the following very simple contrivance, on the principle of permanent relaxation, is recommended as more simple and efficacious:—we must form a double inclined plane, with several pillows rolled firmly upon themselves into the form of bolsters, placed one above the other, and secured together by stitching; and along this double plane, we are to place another pillow lengthwise, extending from the hip to the heel—the leg and thigh are retained in their places, by sheets folded round the limb after the manner of a cravat, and secured by their ends to the posts of the bed. During the first month, the surgeon ought to raise the thigh a little almost every day, and gently to draw the limb downwards. When he has reason to believe that the consolidation is affected, the double plane should be gradually lowered, by removing the pillows, one by one.

By this simple contrivance Dupuytren has succeeded in obtaining numerous cures with little or no shortening of the limb.—*Journ. Univ. et Hebdom. and Medico-chirurgical Review, July*, 1832.

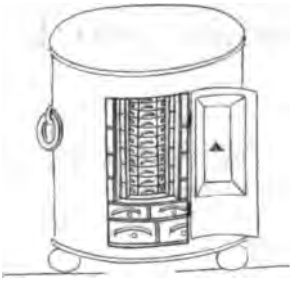

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Fig. 2.

Fig. 3.

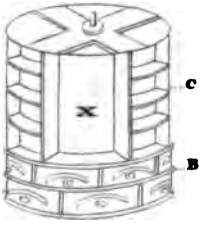


Fig. 4.

Fig. 5.

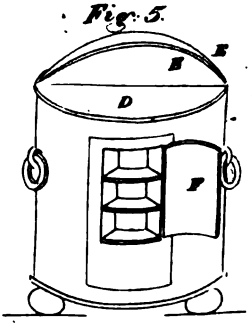
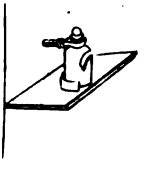


Fig. 6.

Fig. 7.



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PART I.

ORIGINAL COMMUNICATIONS.

ART. XI.—*Observations on the Use of Tracheotomy in Chronic Diseases of the Larynx, illustrated by Cases.*—By RICHARD CARMICHAEL, M.R.I.A., one of the senior Surgeons to the Richmond Surgical Hospital, &c., &c.

IN the second edition of my *Essay on Venereal Diseases*, after detailing the unfavourable result of all the known methods of treatment in those cases where symptoms of venereal ulceration of the larynx existed, I submitted to the profession the propriety of having recourse, under such circumstances, to the operation of tracheotomy before the lungs should become incurably diseased; which, in numerous instances, I had witnessed to be the inevitable and fatal result of venereal ulceration of the larynx. "The presumed modus operandi," I observed, "of an opening in the trachea, as a remedy, is to allow the patient to breathe through the artificial opening, and permit the larynx to remain undisturbed by the presence of a constant current of air, and thus induce that favourable state

of quiescence, which is necessary to the healing of an ulcer in any situation."*

At the time the above was written I had no experience of the remedy thus proposed, but I since have had the most ample opportunities of trying the efficacy of this measure, and can now, from the favourable termination of almost all those cases in which it has been tried, recommend it with confidence to the consideration of the profession.

I cannot, nor is it perhaps necessary, detail all the cases in which tracheotomy has been performed in the Richmond Hospital, for venereal ulceration of the larynx; for unfortunately the case book, which contained those cases, has been lost or stolen some years since, during the indisposition of Mr. Paul, the then resident pupil of the hospital, to whose charge the book was intrusted. But the leading features of several of those cases are so fresh in my recollection, and that of others who witnessed them, that a sufficient number of facts can be briefly laid before the profession to evince the utility of the proposed measure.

The first case that occurred to me, in which I performed tracheotomy for this form of disease, was that of a man who had lost the velum and uvula, from venereal ulceration; ulcerated patches were visible at the time of his admission, deeply seated on the back of the pharynx, while the superior part of it exhibited the cicatrices of former ulceration. His voice was so hoarse as to be almost indistinct, while a constant croupy cough, and incessant endeavours to hawk up a viscid phlegm, marked sufficiently the existence of ulceration of the larynx. He was greatly enervated, and so exhausted by the malady and the means which had been previously employed, consisting of mercurial courses and fumigations, blisters, caustic issues, &c., &c., that the late Mr. Todd, in consultation on the propriety of the measure, observed, that any experiment was fair in a case in

* Work on Venereal Diseases. 2d Ed. p. 213.

which all the known means had failed, but that in his opinion, neither operation or any thing else could save the man's life. The operation was however performed, in his presence, that of Mr. Peile, and the pupils of the hospital—and the man experienced immediate relief, rapidly recovered, and was discharged the hospital in three weeks afterwards, perfectly well.

The next case I am enabled to give from a memorandum kept by Mr. Henry Flood, who was, at the period, my resident pupil of the hospital; it occurred soon after the preceding case. The patient, by name, Ann Braddish, was admitted June 27th, 1825; she had been long ill with the venereal disease, the ravages of which were apparent in different parts of her body, but particularly in her throat, where long continued ulceration had destroyed the uvula and the greater part of the velum; she was affected with extreme dyspnœa, a constant croupy cough, and the most distressing efforts to bring up phlegm, which was brought up only in very small quantities and with the greatest difficulty. She had undergone repeated salivations, and the marks of blisters were apparent over the front of her throat. It was obvious that her only chance of life depended upon the operation of tracheotomy, which was performed the following day, in the presence of the surgeons and pupils of the hospital. The operation was followed, as in the preceding instance, with immediate relief, and in about a fortnight from the time of the operation the patient was discharged, perfectly well, and never had afterwards a recurrence of the complaint.

For the next case, which had an unfavourable termination, I am indebted to Mr. Paul, of Blessington-street, Licentiate of the College of Surgeons, who was, at the time of the occurrence of this case, resident pupil of the Richmond Hospital. The notes he sent me are as follows:—

"The patient's name, M'Namara; about forty years of age; broken down constitution; countenance, anxious, sallow, and emaciated; admitted into hospital in the summer of 1826.

The man attributed his present complaint to cold caught after a severe mercurial course for venereal, the remains of which were at the time well marked on his thighs, legs, and chest, cicatrices the size of half-a-crown, livid, smooth, and slightly depressed; voice almost gone, the whisper *hoarse;* attempts to speak with great exertion, heaving of the chest; the inspiration, I recollect to have been greatly laboured; his chief complaint, a soreness which he felt in the larynx, which was painful on pressure, accompanied by a hollow sounding cough and expectoration of tenacious phlegm; his breath very offensive. The treatment was pills of calomel, hippo, and opium, repeated blisters to the fauces and nape of the neck. He was between a fortnight and three weeks in the hospital before the operation was performed by Mr. Carmichael; little or no blood lost at the time, but a troublesome hemorrhage followed after the operation, from small capillary arteries and veins; it was more an oozing from the edges of the wound, which during the evening became tumid, everted, and painful; it was, I recollect, particularly distressing to the patient, from the severe dyspnœa that came on from the blood making its way into the trachea, but it was easily suppressed by lint and the pressure of the retractors, which kept asunder the edges of the wound. Late the same evening, Mr. M'Dowell was sent for (as Mr. Carmichael was not in town) who enlarged the wound in the trachea, upwards, with bistoury and scissors, as the opening did not appear sufficient for the passage of the frothy mucous, which collected in large quantities. The man died the following morning.

"On examination, the epiglottis was so thickened as to be almost immoveable, and appeared incapable of acting as a valve to the air to the larynx during the passage of the food down the stomach; a circumstance which occasions, in these unfortunate cases, great additional suffering to the patient whenever he is obliged to take nourishment. The lining membrane of the larynx was every where so much thickened as nearly to close its cavity, and on the lower part of the thyroid cartilage was a

large, foul, and deep ulcer, of a size sufficient to contain a large bean. The diseased parts are preserved in the museum of the Richmond School."

The next case I shall lay before the public is one of high interest; it is an instance of chronic laryngitis arising from repeated attacks of catarrh in a person probably predisposed to the complaint, as she was all her life subject to hoarseness, whenever she caught cold. The patient, a lady about fifty years of age, resides in Belfast, to which town I was called to see her in the beginning of last May. I found her seated in an arm chair, breathing with great difficulty, and making deep and long sonorous inspirations, of a croupy character; she had not been able to lie in the recumbent position for several weeks, and her legs were swelled and œdematous as high as the knees; on examining her and inquiring into the history of her complaint, I instantly came to the decision that nothing could save her life but tracheotomy, which I accordingly performed the following day, assisted by Mr. M'Cluney and Doctor Henry Purdon, both of Belfast.

For the following history of the case I am indebted to the latter gentleman:—

"*Belfast, August* 10, 1832.

"My Dear Sir,

"For the last two years our patient, Miss B——'s breathing has been slightly affected when ascending a hill, and whenever she caught cold her voice was husky; last August, after a slight attack of catarrh, her voice continued weak, which however gave her no uneasiness, as she expected that it would, in a little time, return to its former strength; but, in December, her friends becoming uneasy, the gentleman (Mr. M'Cluney) who attended the family was consulted; her voice then was almost completely gone; she had occasionally a cough; the larynx was rather tender on pressure; the respiration slower than natural; deglutition difficult at times; pulse

slow and regular; sleep, appetite, bowels, and strength perfectly natural; leeches were frequently applied to the neighbourhood of the larynx, also blisters and various expectorants.

"I saw her about the middle of last February, her voice was then stridulous, or rather a low whisper, and the cough and inspiration were very like what I have heard in the advanced stage of the croup, attended with a sensation of tightness in the larynx.

"She went to Dublin in the latter end of the same month, and during the journey her breathing was much easier. After consulting Mr. Colles, she returned towards the middle of March, and immediately commenced using the medicines he had ordered, which were, mercury internally, and a stimulating liniment externally; her mouth became sore in about eight days, and was kept so for twenty-four, and then, as she found herself rather worse, the mercury was omitted, and the mouth allowed to get well; during the time it was sore, small portions of mercurial ointment were rubbed in along the side of the thyroid and cricoid cartilages, with the double view of keeping up the general action of mercury on the system, and at the same time of exciting local counter-irritation; after this a very stimulating gargle was used, which increased the flow of saliva, and caused great irritation, without, however, producing any amendment; lastly, a solution of the nitrate of silver was applied to the lower part of the pharynx, by means of an elastic tube, through which a piece of wire was passed with some lint dipped in the solution (the strength of this was ℥ss ad ℥i). Every application caused a severe paroxysm of dyspnœa, and as there was no amelioration, but a gradual increase of dyspnœa, after having been repeated ten or twelve times, it was omitted. We now tried frictions with iodine ointment; but this she was unable to bear, from the severe irritation it caused on the skin.

"At night she had paroxysms of orthopnœa lasting for perhaps four or six hours, and for this she took various antispasmodics, all of which relieved her for once or twice, and

then failed; during the day she was always better, and when the weather permitted, went out in a carriage, and while there was invariably better, the inspirations being much easier and less noisy. Towards the end of April her feet and legs began to swell, and she was unable to lie down at night, but the pulse still continued about seventy-four and good, and the lungs appeared sound, the inspirations twelve in a minute.

"You first saw her on May 4th; then the dyspnœa was very urgent; her pulse seventy-eight, rather weaker than before; lungs sound, both on auscultation and percussion; slight tumefaction on both sides of the larynx. You operated on the 5th, making the first incision with a bistoury; there was a great deal of fat under the integuments; no vessel was divided; that night she slept a little, and was easy next day; on the 7th her breathing became much oppressed, and as the wound and adjoining integuments appeared much swollen and inflamed, you directed a number of leeches to be applied, which caused an oozing of blood during almost the entire night, and was followed by *great and decided relief;* afterwards, her amendment was steady and progressive; she breathes freely through the wound, which we are obliged to keep open with two concave plates of silver, that form a tube when pressed together, but she is incapable of speaking. In a note, which I received from her this day, she says: 'That my general health is quite good; 'rest, appetite, and strength, all excellent; but I am dumb, 'and shall remain so for life.'

"At present she cannot inspire at all by the natural opening. Should this account not prove satisfactory, it will give me great pleasure to fill up any omissions, or write another if you wish, and believe me, dear Sir,

"Your truly obliged,

"HENRY PURDON."

Now, although I admit it is a great misfortune for a lady to lose her voice, yet it would be much greater to lose her life, which must have been inevitably the case had not the oper-

ation been performed. Besides, the loss of voice cannot be altogether laid at the door of the operation, for it was all but lost before that measure was resorted to. For all the other cases of affections of the larynx, either acute or chronic, upon which I performed tracheotomy, the voice was gradually restored as the inflammation and swelling of the larynx subsided; the wound in the trachea, notwithstanding the removal in every instance of a portion of the rings, progressively closing as the obstruction to the passage of air in the larynx diminished.

In the present instance, the same happy result would, no doubt, have ensued, had not the obstruction to the passage of air been owing to a chronic and thickened state of the lining membrane of the larynx, so obdurate as not to yield to the plastic power of the absorbents, even when the artificial opening in the trachea allowed the affected organ to remain in a state of quiescence. With the view of reducing this thickened state of the mucous membrane, inhalation of iodine was resorted to, but without success.

The patient had been, as was mentioned before, all her life predisposed to chronic laryngitis, as her voice was naturally husky, and whenever she caught cold she was subject to obstinate attacks of hoarseness.

The object of this paper is to evince the utility of tracheotomy in venereal and other chronic affections of the larynx, which hitherto have been left to means incapable of combating the disease; and although I have not brought forward one-half of the instances which I might have done to support this position, sufficient has been said, I conceive, to establish not only the propriety, but the necessity of this measure in similar cases.

I shall conclude this paper, I fear already too long for your publication, by an account of a successful case of tracheotomy, which, however, does not bear upon the subject of the present communication, as it was not a chronic, but an acute affection of the larynx, for which the operation was performed.

My friend, Mr. Adams, one of the professors of anatomy

and surgery to the Richmond School, and known to the profession for his many admirable contributions to medical and surgical science, had the kindness to furnish me with the following note of a case in which I had the good fortune to have the advantage of his valuable assistance:—

"*July* 21*st*, 1831.

"Mr. Carmichael called upon me on the 21st of July, 1831, to visit with him a case of great emergency, and in his opinion, requiring the immediate operation of tracheotomy. A fine little boy, aged two years, attempted to take a drink through the spout of a tea-pot which had been just filled with boiling water. It is probable that the child did not swallow, nor even take a sup of the water, but merely inspired the steam from the hot infusion of tea, just prepared; the child did not, after the first few moments of pain and fright, suffer much until late in the day, when he was visited by Mr. Barker, of Great Britain-street, who had his neck well leeched, and gave him some purgative medicine.

On the following day, however, eighteen hours from the accident, the child appeared to be in imminent danger of suffocation, and he advised that Mr. Carmichael should be sent for. The child, upon our visit, appeared to be breathing with as much difficulty as if he were in the last stage of croup; and I entirely coincided with Mr. Carmichael, that the operation afforded the infant the only chance of life. The professional responsibility which attached itself to this decided proposal was not a little increased by the circumstance, that the parents of this fine little child were from home, and in ignorance of its condition; however, this was not a case for delay, and the child having been placed on a table in the middle of the room, Mr. Carmichael commenced the operation by making an incision, about one inch and a-half long, over the trachea; this was soon followed by another deeper one, to the same extent, and which, probably, divided the strong fascia which connects

together the edges of the sterno-hyoid muscles; this incision was followed by a profuse hæmorrhage of vermillion-coloured blood, and which we conjectured came from an artery, both from its colour, and the violence with which it sprung from the wound; upon enlarging this last incision, to render practicable the securing of the artery, which we had supposed wounded, the bleeding suddenly ceased; the trachea was exposed as much as possible by the retractors acting on the lips of the wound, at this period, during strong expiratory efforts of the chest; the thymus was raised up, and there was a difficulty in repressing it with the finger, to keep it out of the way of the edge of the knife, while the operator was clearing the part of the trachea he was about to make his incision into; the trachea could scarcely be seen in the bottom of such a wound, more than an inch deep, but could be now most satisfactorily felt; the bleeding had altogether ceased; *a double hook was struck into the trachea* and a circular piece cut out by a large pair of scissors; this part of the operation was done in a moment, and did not produce the irritation which opening the trachea ordinarily does. Indeed, the child was now faint, weak, and looked almost quite exhausted; the skin was white and cold, the pulse indistinct, and respiration was only to be perceived by looking attentively at the motion of the abdomen; the poor little patient however, soon got warm in bed, and when the pulse was restored we left it in charge of its attendant. The opening in the trachea was perfectly free, and required no tube.

The little patient passed the evening and night tolerably; the respiration was, since the operation, perfectly free, and so easy as scarcely to be heard—until two in the morning, when the breathing became difficult, and accompanied with much rattling in the trachea; after an hour, however, some mucus was expectorated, and the child slept soundly until past eight in the morning; when I saw it, reaction, after the depression produced by the operation, seemed to have taken place; the countenance flushed; the skin hot; the pulse quick and sharp:

there was a rattling sound in the trachea, from mucus which moves up and down, and seeming to act as a foreign body, producing hurried breathing; the pyrexial symptoms were mitigated by venesection; but the breathing still remaining of the same character as above described, Mr. Carmichael introduced a probe, covered with lint, with which he swept the trachea up and down, and thus was the child greatly relieved by the bringing out of much mucus. The probe, thus armed, was left with the attendants, and whenever the difficulty of respiration came on, from the accumulation of tough mucus, they soon learned to use this simple and feasible means of relieving the child; in two days, however, the child was in a most critical and doubtful state, but on the fourth day was convalescent, and in about ten days was perfectly restored to health; the wound in the trachea having perfectly healed.

"At this moment the child is aged three years; all that remains of the operation is a cicatrix, about half-an inch in length; respiration and voice perfectly natural.

"ROBERT ADAMS."

I shall conclude this paper, which I thought I should been able to compress within much smaller dimensions, by observing that the operator will find great advantage by employing a double hook, which he may boldly plunge into the trachea, as soon as the rings are sufficiently bared for the purpose. By this measure he fixes a part which it is difficult to operate on with safety, as it is in perpetual motion in a person struggling for breath, and at the same time situated at the bottom of a deep wound, and surrounded by the most important vessels: but by means of the hook he is enabled to draw forward the trachea and perforate it with ease. I always employ scissors for this purpose, and cut out a portion of the trachea, as has been fully detailed in two papers on the subject inserted in the 2nd and 4th vols. of the *Transactions of the Association of the Dublin College of Physicians,* in which a considerable number of cases of tracheotomy is detailed, in not one of which

was a tube introduced. The opening made in the trachea being found quite sufficient for the passage of air and mucus, and not attended with that irritation which the introduction of a foreign body within the highly sensitive internal lining of the trachea, must inevitably occasion.

Let no young practitioner estimate the performance of tracheotomy by the ease with which it is done upon the dead subject. In the living, the parts we have to divide are often swollen, and so turgid with blood that the successive steps of the operation are observed by a rapid oozing of blood with every touch of the knife. The person upon whom we operate is all anxiety, and struggling for breath. In order to avoid the thyroid gland, you must frequently make your incision so low in the neck that it comes upon the sternum, and it will be found often necessary to open the trachea close to the sternum, where it is most deeply situated, and where the surgeon runs the risk of opening the arteria innominata or subclavian vein, or even one of the carotid arteries (the left,) where both arise from the arteria innominata. In young subjects, also, upon whom the practitioner is so often called upon to operate, in cases of croup, the rising of the thymus gland upon the trachea, until it even touches the thyroid gland, in the struggles of the young patient to breathe, also renders this operation very difficult, and demands, upon the part of the operator, the utmost coolness and collection of mind ; and when, with all these embarrassments, he knows that anomalous large arterial branches often course in front of the trachea, it will be readily allowed that there is cause for as much anxiety in the performance of this, as of any operation in surgery. But if the practitioner is obliged to perform it at night, the difficulty is greatly increased ; for it is impossible, as I have often experienced, to throw the light of a candle into a narrow and deep wound, so as to enable the operator to see the parts it is necessary to divide.

Under all these circumstances, after the first incisions have exposed the dense junction of the muscles in front of the trachea,

it is better to lay the latter bare, by scraping with the nail, the director, or any blunt instrument, than to use the knife in a deep wound, obscured by blood, and in the midst of important vessels which you cannot see. When the trachea is rendered sufficiently bare to admit of being seized upon by the double hook, the remainder of the operation, although the most important part of it, is comparatively safe, and may be completed either with the knife or scissors. If with the former, after the trachea is pierced with a sharp-pointed knife, a round piece of it may be cut or scooped out (including that transfixed by the double hook) by means of a straight-buttoned bistoury. If with the scissors, a lozenge-shaped piece may be cut away, as was particularly described in my paper on the subject, inserted in the 4th vol. of the *Transactions of the Association of the College of Physicians.*

ART. XII.—*Observations on the Treatment of Various Diseases.* By ROBERT J. GRAVES, M.D., M.R.I.A., King's Professor of the Institutes of Medicine.

(*Continued from p. 27.*)

LOSS OF VOICE.

AFFECTIONS of the larynx, giving rise to hoarseness and loss of voice, often prove very obstinate, and difficult to cure; several authors have insisted upon the good effects of mercury, administered with judgment, in such cases; but none have treated this subject so much at length, and in my opinion, with so much clearness, as Mr. Porter, in his *Observations on the Surgical Pathology of the Larynx and Trachea.** Had succeeding writers adopted Mr. Porter's views to the extent they deserve, or were the rules he lays down generally acted on by

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* See particulars, p. 115 and 125 of that work.

the profession, there would be but little occasion for the following remarks.

When hoarseness or loss of voice are of recent occurrence, and evidently connected with laryngeal inflammation; when they are of long standing, but still accompanied by symptoms usually recognised as indicative of local inflammatory action, then few British practitioners will fail to apply the mercurial plan of treatment. But when all the other symptoms of local inflammation have subsided; when there is no soreness, no tenderness of the throat or air passages; when there is no cough, no dyspnœa; in short, when the lost voice, or a low and feeble whisper, is the only remaining indication of disease, then are we to have recourse to mercury, even though months have elapsed since the disappearance of the symptoms above enumerated? The result of the following case strongly encourages us to do so, and teaches us, in considering the method of treatment suited to such cases, not to attend merely to the symptoms discoverable at the moment, but also to those which had accompanied the first origin of the disease. Had this view of the subject been clearly impressed upon my mind, or had the eminent practitioner, who was consulted immediately before me, been aware of its importance, many months would have been gained, and the young lady's voice would have been restored early in March, instead of late in August.

"Miss G——, aged twenty, of a strong and robust frame, had always enjoyed good health until February, 1831, when her appetite began to decline, and her menstrual discharge became irregular. On the 14th of July, 1831, she accompanied some of the young ladies, from a school where she acted as governess, on a party of pleasure to the country; in the evening, after much exercise during the day, she sat near an open window, and caught cold, affecting her with hoarseness and sore throat. Being at a boarding-school, she did not wish to give up her usual business, and struggled against the disease for a few days, when she went home, and sought the benefit of medi-

cal advice, being then very unwell and feverish. The symptoms yielded, in the course of a short time, to the antiphlogistic treatment employed, and she resumed her employment as governess. The laryngeal symptoms did not return until the 1st of September, when she again complained of hoarseness, worse in the evening than in the forenoon, and very variable in intensity, sometimes growing better and worse, alternately, three or four times in the course of the day. This fact, together with the absence of the menstrual discharge, and a lowness of spirits, accompanied by considerable nervous irritability and occasional headach, suggested the idea that the loss of voice was occasioned by hysteria; and under this impression, she was ordered to take the *mistura ferri composita*, and to use tepid shower baths; a small blister was also applied to the larynx. She was advised to try the effects of change of air, and went to the country, where she remained until November, without experiencing much relief as to her general health, and very little diminution of the hoarseness. Her appetite being very bad, and her bowels slow, the compound decoction of aloes was added to the iron mixture, and small doses of sulphate of quinine were likewise exhibited. On the 14th of November, she again complained of soreness of the throat, increased by swallowing, and the hoarseness at the same time became worse; leeches were applied to the larynx, and in a few days a succession of small blisters. By these means her voice was restored, but was weak, and on resuming her occupation, which required much speaking, it again failed; the hoarseness re-appearing, at first only in the evening. This state of things continued until February, 1832, when another febrile attack followed a fresh exposure to cold, and was accompanied by an increase of the hoarseness, and by cough, and pain in the chest. These symptoms yielded, for the most part, to venesection, and other appropriate remedies; and her general health appeared, for some time after this, to improve—the menstruation becoming tolerably regular. The laryngeal affection,

however, had not yielded, for the hoarseness returned frequently, in the evening. She again went to the country, where she remained three weeks, and then returned to Dublin, evidently worse—the depression of spirits, loss of appetite and strength, having increased. An eminent practitioner was now consulted, who ordered four leeches to be applied to the larynx every second day, until they had been four times applied; after which he directed a succession of small blisters: infusion of columbo, and nitro-muriatic acid were likewise prescribed. This plan, persevered in for a month, failed to produce any alleviation of the complaint, and, in the month of April, my advice upon the case was requested by Mr. Madden, of James's-street.

When I first saw her, this young lady was pale, and somewhat reduced in flesh; she complained of weakness and loss of energy; her appetite was altogether gone, and the bowels torpid: there was no pain or soreness about the larynx, and the voice was reduced to a mere whisper; as the throat and pharynx appeared to be in a relaxed state, I directed the daily application of a solution of nitrate of silver to these parts, and ordered *Lugol's solution of iodine*, internally; constant car exercise was recommended, and a light but nutritious diet, together with residence in the country. These and various other means, intended to improve the general health, got a fair trial, but altogether failed to produce relief. Under these circumstances her friends despaired of her recovery, and she left off all medicines. The voice, now reduced to a low whisper, but unattended by cough, or hawking, or any disagreeable sensation about the larynx, remained in the same state until the middle of August, when she caught fresh cold, and I was again sent for. This attack required venesection and the antiphlogistic treatment, which I followed up with calomel and opium, given in moderate quantities, until the mouth and gums became affected; a rapid improvement took place, and after the mercurial action had continued four or five days, the

hoarseness disappeared, and her voice returned with its natural strength and tone. She remained in bed for a fortnight longer, to insure a kinder action on the part of the mercury, and strict silence was enjoined. This plan succeeded most fully, and it is remarkable that the appetite and spirits underwent a most rapid improvement after the mercurial action on the system. I was deceived in this instance, because I did not lay sufficient stress upon the evidently inflammatory origin of the case; and likewise, because the appearance of the patient, and the sound of the whispers, strongly put me in mind of another case I had witnessed, in which loss of voice had lasted half a-year, and was cured by tonic treatment alone. The latter case, with the particulars of which Dr. Evanson is well acquainted, had, however, at no period any symptom of laryngeal inflammation, and occurred in a lady liable to attacks of catalepsy, often of several days' duration. I may mention, *en passant*, that this cure had formerly been the subject of consultation between Doctors Perceval, Cheyne, and Bailly, and that after medicines, almost numberless, had been tried in vain, the cataleptic fits were found to be more relieved by spirits of turpentine, given internally, than by any other medicine. It is worth observing, too, that the cataleptic seizures first appeared after she had been subjected to a mercurial course, for the removal of a pain in her right side, supposed to depend on chronic hepatitis. From what I have since seen of her constitution, I have no doubt that the pain was neuralgic, and connected with the spinal irritation of hysteria. Numerous are the patients whose health used to be irretrievably undermined, a few years ago, by mercury, in consequence of mistaking this neuralgia for hepatitis.

CHRONIC PURPURA CURED BY CORROSIVE SULIMATE.

The following case was communicated to me by Doctor Carter, Staff Surgeon; a gentleman distinguished for the zeal

with which he cultivated medical science, during his residence in Dublin.

A gentleman, about forty years of age, stout, of indolent habits, very fond of good living, and easy in his circumstances, applied to me for advice, when I was quartered in Nova Scotia; he had passed the greater part of the preceding night at a ball, where he had danced a great deal, and was well when he retired to rest. That night (27th March, 1827) the thermometer stood at thirteen degrees below the freezing point.

In the morning he observed that his arms were covered with an eruption, which was, evidently, purpura. The spots were numerous, and highly coloured, and in a few days after I first saw him, they had extended to the trunk and lower extremities; on the latter it always remained distinct, but on the trunk and upper extremities it soon became confluent. He was at once placed under the influence of an antiphlogistic plan of treatment, and was bled from the arm five times (the blood, each time, was covered with a buffy coat,) and twice was also cupped. The bleeding did not produce the slightest diminution of the eruption. During the continuance of this treatment his bowels were frequently acted on by purgative medicines; and afterwards, on account of slight hemorrhage from the bowels having twice taken place, astringents were added to the aperients. These remedies failed to produce the slightest abatement of the eruption; mercury was next tried, and his mouth was made sore. The disease remained unchanged until the following November, when Doctor Carter left Nova Scotia. This gentleman came to England in 1829, that is, in two years after the eruption had first appeared. When he arrived in London, the purpura was just as it had been when Doctor Carter had last seen him. He was advised to consult Sir Astley Cooper, who put him on the use of Fowler's solution (liquor arsinicalis.) Having given this remedy a fair trial, it was found to disagree, and was omitted. Sir Astley Cooper then prescribed two grains of corrosive sublimate, dissolved in two ounces of spirit of ni-

trous ether; of this he directed one drachm to be taken twice a day. Under the use of this medicine, a visible improvement was soon perceptible, and the gentleman rapidly recovered.

If I remember rightly the particulars of a conversation I had with Doctor Carter, on the subject of this case, he stated to me, that, with the exception of the eruption, and an occasional slight discharge of blood from the bowels, this gentleman's health was unimpaired. Cases will suggest shemselves to the recollection of every practical physician, in which one preparation of mercury proves useful after another had failed. In the instance before us, the success of corrosive sublimate was striking, whereas, calomel and blue pill, pushed far enough to affect the mouth, had been productive of no benefit. I have not met with any other case of chronic purpura, in which corrosive sublimate was used; neither do I believe that it has been recommended in this complaint by any author. It may, therefore, be added to the list of medicines suited to this obstinate disease; obvious considerations will guide the practitioner in its employment; nor should it be had recourse to until the more usual modes of treatment have failed.

CANCER PLASTER.

Surgeons are well acquainted with the fact, that certain applications, particularly that of arsenic, to open cancer, have occasionally produced a separation of the diseased from the healthy parts, and have thus cured the disease. The uncertainty of this salutary effect being produced, and the danger of the constitution being affected in consequence of so deleterious a substance being placed in contact with the sore, have deterred surgeons from adopting this practice generally, and there is no doubt that when an operation is practicable, the knife affords the safest and most certain means of extirpating the disease. Still, as there are persons who cannot be induced to consent to an operation, a knowledge of other means of effecting the re-

moval of the diseased part, ought not to be altogether rejected as useless. Many years ago, an old gentleman, a relative of my own, got cancer of the under lip: he had conceived strong prejudices against operation by the knife, and consequently allowed the disease to increase without making use of any effort to arrest its progress. After it had continued for a long time, and had become not only very disfiguring, but distressing, he was persuaded by a gentleman, who had been afflicted with the same complaint, to try a plaster which, in his case, had eradicated the disease, and the receipt for making which he had purchased for a very considerable sum. I am perfectly aware of all the circumstances which attended its application in the case of my relation, who used it contrary to my advice; and I must confess that its success was perfect; as after remaining attached for more than three weeks, the whole of the cancerous mass loosened, and fell out. The part immediately healed rapidly, and the disease has not returned, although a period of eight years has since elapsed. On the composition of this plaster I may remark, that the lichen forms an ingredient, useful probably on account of the vegetable gum it contains, and which assists in rendering the mass, when properly prepared, powerfully adhesive: I may add, that this plaster is much esteemed in Templemore and the country in its neighbourhood, where I am assured that it has performed many cures, quite as remarkable as that which I myself witnessed. The receipt is given in the words of the old gentleman already spoken of:

"Get a parcel of green or ash-coloured Ground Liverwort, (the Irish name of which is *Eowe*;) take the fibres from the back of each leaf, and make them perfectly clean; dry it as green as possible, powder it, and searce it through a very fine silk searce. Take two drachms two scruples of this powder of the green Ground Liverwort and one drachm one scruple of white arsenic finely powdered, one ounce of common turpentine, and one spoonful of white wine vinegar; put the arsenic first into your mortar, and the vinegar to it

by degrees, constantly working it until it be dissolved, and the arsenic becomes as smooth as cream; then add the other ingredients, and when completely well mixed, lay it up in a *turned wooden box*, and keep it in a dry place, and it will be as good in years as the day it was made.

"The following is the manner of using it: Fit a bit of the finest bladder to the sore, then scrape a small quantity of the plaister, add to it a few drops of the yoke of an egg, work it with the blade of a knife on a smooth hard board until it becomes quite smooth, and then spread it smooth on the bladder, and smear it over with a drop of the yoke of an egg to make it quite smooth and the bladder completely covered. Apply it to the sore without any bandage, pressing it into every crevice, and sticking it close to the edges.

"The general and safest mode is to permit the plaster to remain on until it comes off of itself, which mostly requires three or four weeks.

"The writer of the above receipt, from its effects on himself, and what he has seen in numerous cases of others, is convinced that nothing within the *materia medica* can be so effectual in eradicating cancer, where it may be applied: the roots, when extracted, appear like white threads."

EXTENSIVE ORGANIC DISEASE OF THE STOMACH UNACCOMPANIED BY ANY SYMPTOMS.

John Byrne, aged 68, was admitted into the clinical ward of Sir Patrick Dunn's Hospital on the 9th of July, 1830. Five weeks before his admission he had slept in a damp bed, caught cold, and was affected with difficulty of breathing, and afterwards anasarca. These symptoms continued to increase until the date of his admission. On examination with the stethoscope, considerable bronchitic inflammation and pulmonary engorgement were discovered; his appetite was tolerable, and he did not complain of any pain in the stomach, or nausea; within the last few days he has been attacked by a diarrhœa of no great severity. During the seventeen days which elapsed

between his admission into the hospital and his death, nothing occurred capable of exciting suspicion of any disease of the stomach. On dissection, the stomach externally presented the appearance of the hour-glass contraction; on opening into its cavity this contraction was found to be connected with a tumour caused by a morbid growth from the mucous membrane. This tumour was of a medullary structure, and exhibited, at one portion of its surface, a bloody appearance. In size it equalled a large mushroom, its edges overhanging the base, which consequently had somewhat the appearance of a peduncle. It was situated in the greater curvature about midway between the cardiac and pyloric orifices. The peritoneal coat over the tumour was adherent to the mucous membrane, and presented a corrugated appearance. There were two small tumours of similar structure in the neighbourhood of the large one, and like it, attached to, or growing from the mucous membrane by a peduncle; they differed, however, from the larger, in being connected with the mucous membrane alone, and in not having induced any morbid adhesions between that membrane and the other tunics of the stomach.

These tumours appeared to have been the result of a morbid growth totally unconnected with inflammation, and therefore occasioned no symptom indicating their presence. Had the man lived much longer, there can be scarcely any doubt that their structure would have undergone a remarkable alteration, and have become more vascular, so as to convert them into bleeding fungous masses. This change had already partially commenced on the surface of the large tumour.

ULCERATION OF THE STOMACH.

In February, 1829, I was called on to visit an unmarried lady, of about twenty-five years of age, who suffered much from pain in the stomach, frequent nausea, vomiting, acidity, and indigestion. The symptoms of dyspepsia first showed

themselves immediately after a violent nervous shock she received, in consequence of fire breaking out at night in her father's house. At different times they had ceased altogether; and during the three years which had elapsed since the fright and my first visit, she had been sometimes five or six weeks perfectly well. Latterly, the intervals of ease had become less frequent and shorter, and the dyspeptic paroxysms proportionably increased in duration and severity. She was debilitated, pale, and emaciated, but totally free from fever or local pain. I shall not relate the means which were unsuccessfully employed by the Surgeon-General, Dr. Marsh, and myself; suffice it to say, that after some months from my first visit, she began to complain much of a fixed pain and tenderness in the region of the stomach, and the fluid rejected by vomiting now frequently assumed a reddish tinge, and finally she discharged at times large quantities of the sanguinolent mucus, and matter resembling coffee grounds, so often indicative of organic disease of that viscus. This state of things continued for several months, when, gradually, the pain and tenderness disappeared, and the matters vomited resumed their former appearance. This change, however, was not succeeded by any visible improvement, for the vomiting was as violent as ever, and always succeeded taking food of any sort, even the least irritating and blandest we could think of. The interval between her taking food and the occurrence of the vomiting was variable; sometimes quarter of an hour, sometimes an hour; but always she described the vomiting as caused by *a working in her stomach*, produced by the food arriving at a certain point, beyond which, she insisted, none of it ever passed. At this period of her disease Dr. Ireland was called in, and continued in attendance along with me, until her death, which took place in December, 1829, evidently in consequence of inanition. On dissection, we found that the stomach was healthy, except immediately in the neighbourhood of the pylorus, where the cicatrix of a very large ulcer was plainly discernible. This ulcer had destroyed

the mucous membrane and muscular coat, and was only arrested in its progress by the serous membrane ; its edges did not present the appearance of morbid induration, neither was there any vestige of schirrous in its vicinity. The bottom of the cicatrix formed a sort of serous sac or shallow bag, and was so situated that when the contents of the stomach approached the pylorus, a part of the mass found a ready entrance into this little bag, which, consequently, became distended, and then, from its position, pressed between the outside of the pylorus and the neighbouring parts, in such a way as to render the passage of food through the pyloric orifice impossible. From the history of the case, and the phenomenon observed on dissection, I think we may draw the following conclusions.

The violent shock her nervous system received laid the foundation of the dyspepsia, with which this lady was at first affected. It is probable that the indigestion was merely functional in the beginning, and so continued until the well-defined pain and tenderness, with black vomiting, &c., commenced, which marked the period of ulceration. The healing of the ulcer was probably synchronous with the cessation of the latter symptoms ; and had the ulcer been situated in any other part of the stomach, or had the serous membrane refused to yield so as to form a bag, then a perfect recovery would, probably, have taken place.

Dr. Ireland assisted me in making the dissection, and, at the time, I considered the morbid appearances so remarkable, that I exhibited the stomach to my class at Sir Patrick Dunn's Hospital.

REMARKABLE CASE OF DECEPTION.

The subject of feigned diseases did not, until lately, receive the attention it deserves, and, consequently, our predecessors were not aware of the extent to which deception is sometimes carried by patients. The records of modern medicine contain

many interesting and well authenticated facts of this nature, and prove that extreme patience and ingenuity are often exercised for the purpose of imposing on the patient's relations and medical attendants. It has been observed that the persons most liable to be seized by this unaccountable propensity, which in some amounts to confirmed monomania, are generally of a nervous temperament, and in a delicate state of health, labouring for the most part under the influence of hypochondriasis; such was the case in the woman who practised the deception I am about to describe.

On the twenty-fifth of January, 1825, I was requested by my friend Dr. Speer, at that period physician to the Castleknock Dispensary, to accompany him to the Phœnix Park, for the purpose of visiting the sister of Mr. Gregory's gardener, concerning the nature of whose illness several strange stories had been circulated, on the authority of her medical attendants. Several circumstances had occurred, all tending to make Dr. Speer doubt the accuracy of their reports; and being now called in to see the young woman, and give his opinion upon the case, he thought it right to act with circumspection, and for that reason he had requested me to bear testimony concerning the result of the investigation.

It was the appearance of the alvine evacuations which had excited so much curiosity, and given rise to so much speculation; for the fœcal matter was frequently found mixed with substances of a most unusual appearance; some of these had been pronounced to be gall-stones by the surgeon in attendance; and another much larger, softer, and more pulpy, had been sent to Dr. Barker for analysis, accompanied by the sapient conjecture of the attending physician, that it was the nidus of a tape-worm! Will it be credited, that the reputed gall-stones proved to be small, roundish, quartz pebbles, while the tape-worm's nest was nothing more than the pulp of an orange, previously well chewed? These, and many other matters, gathered by the handful, on the gravel walks of the garden, she was in the

habit of furtively mixing with the discharges from her bowels, and had by this means succeeded in deceiving, for several months, her relations and medical attendants; not with perfect impunity, however, for her plan of deception could not be carried on without taking some of the medicines they prescribed.

ART. XIII.—*A Case of Pericarditis.* By JOHN THWAITES, M. D., one of the Physicians to the South Eastern General Dispensary.

THE advantages which the medical profession find daily increasing to them from the use of the stethoscope, have placed its utility, to a certain extent, beyond question, and compelled its most determined adversaries to allow a degree of importance to it.

In diseases of the lungs or heart, an accurate diagnosis cannot conveniently be made without its careful employment, and in the existence of pregnancy numerous instances have proved its efficacy. To pronounce upon a case of pleuritis or pneumonia, of valvular disease of the heart, or of hypertrophy, without stethoscopic observation, would be considered as the act of one totally regardless of professional scientific advantages. To disregard its use because infallibility does not attach to it, appears not a little strange to those whose acquaintance with disease should have long before convinced them of *their own fallibility without it;* while the preponderating advantages which belong to its use should at least gain for it a just and cautious judgment. But while the utility of the stethoscope and the advocacy of its upholders have gained for it the elevated situation which it at present enjoys among the materiel of the medical profession, there is a need for caution among its strenuous supporters and its most skilful applicants lest they retard instead of

advance its progress. There have been instances wherein dissections have proved opinions confidently advanced erroneous, and such have given a momentary triumph to the opposers of the stethoscope; and there have been no few cases in which its use has served to add increasing lustre to the professional character for discrimination and patient research of those whose experience has taught them the benefits of humility of opinion and cautiousness of expression.

The acuteness of hearing which is always necessary to render one master of these symptoms which minute changes, caused by disease, produce in the heart, is not possessed by all; indeed, only by such as enjoy and improve peculiar opportunities; while likewise a conviction of personal capability for forming diagnoses may frequently lead the practitioner into hurried and incorrect opinions. May not also particular prejudices overrule positive evidence in the minds and *ears* of those who are cultivating a particular doctrine? Let us, for instance, consider the *numerous* causes which produce cardiac disease, and the numerous maladies with which it may be either confounded or combined, and he will find *caution* staring us in the face, and commanding attention. How frequently have nervous palpitations excited the greatest fears in the mind of the patient, friends, and physicians, and time pass over before it is discovered that no organic change has taken place. How often have palpitations and "suffocations" which evidenced derangement of the heart's structure been viewed as merely symptomatic of another disease, or dependent on it, until, too late, the real facts are discovered. With such scenes continually before the practitioner, ought he not to yield to the necessity which exists for obtaining a more accurate principle of judgment, and a more sure means of diagnosis than mere general observation, and having found it, to use it judiciously.

Mark Plant, residing at No. 9, Moore-street, aged 7½ years, of sanguine temperament and slight habit of body, presented himself at the South Eastern General Dispensary in February, 1831, complaining of constant oppression and short, unceasing

cough, increasing to a violent degree upon any great exertion, and accompanied with a sense of suffocation. His mother stated that his health had been exceedingly good previous to the last three years, since which time it has been gradually declining. That this delicacy of health commenced with a "worm fever," in which he had been attended by a respectable apothecary, and that during his illness he was affected with "swelling and loss of the use of his limbs." He had got pills, powders, and bottles of various kinds, without deriving any benefit. Some time after, the use of his limbs gradually returned, and palpitation of the heart, with frequent oppression, commenced. For some months he was able to run about and play with other children, but latterly he has been deprived of that gratification by extreme difficulty of respiration on making the least exertion. His health having thus gradually diminished, and no appearance of amendment presenting itself, his mother became so much alarmed that she brought him to the dispensary for advice.

Upon examination, the left side was considered somewhat more distended than the right; the action of the heart was distinctly visible at some distance; countenance anxious, complexion good, but lips approaching to a purple colour; pulse 100, synchronous with the heart's action and regular; pulsation of the carotid arteries greater than natural, tongue clean, bowels rather costive, appetite good, sleep tolerably well; does not complain of any affection of his head, *bruit de soufflet* heard distinctly over the whole præcordial region, and on the corresponding position of the vertebræ posteriorly. *Fremissement* could be felt on the application of the hand to any part of the left side.

Venæsectio ad ℥x.

Habt. Bolus Catharticus.

℞ Tincturæ Digitalis ʒi.
Vini Seminum Colchici ʒss
Tincturæ Iodinii ʒss.
Syrupi Simplicis ℥ii.
Aquæ font. ℥vi m. ft. mistura.
Sumat Cochl un. qq. 6ta hora.

I directed that he should be brought to the dispensary once a week. At first the accounts were favourable, and he generally found himself somewhat relieved after taking the medecine; his mother stated that he slept better at night.

April 5th. He appears somewhat better than at first visit, violence of heart's action diminished, countenance less anxious, pulse 100, but weaker. *Bruit de soufflet* and *fremissement* the same; complains of some pain of side; tongue clean, bowels free.

Habt. Hirudines octo præcordio
Repr. Mistura sine Colchico.

Upon his next visit, a few days afterwards, the pain of his side was quite recovered, but his other symptoms continued the same.

Continr. Medicamenta
Repr. Venæsect. ad ℥x.

I continued the repetition of the bleeding once a fortnight, with the continuance of the other medicines, until the month of September, when he appeared to me much improved, but still in great suffering.

5th. Action of the heart diminished, pulse regular, 100; tongue clean; bowels free; always gets relief for a time after taking the medecine; complains of some pains in his side; spirits much improved.

Habt. Vesicator pectori, et omittr. Venæsectio.
Repr. mistura.

His absence from the dispensary during the winter months prevented my taking notes of the case, until the month of March 1832. His mother, afraid to expose him to the cold and wet, came herself with an account of his progress.

Little or no variation was to be discovered in her account of him, that could be relied on, and of course no alteration was pursued in the treatment; when he appeared, however, there was a considerable change evident in his whole contour. His left side had become much more projected; the pulsations of the heart

more perceptible; the blueness of his lips augmented; and there existed in his very look, a degree of lassitude and anxiety which is not to be described in writing.

I ordered him aperient and alterative medicines, renewed the blisters to his side, and endeavoured, by increasing the dose of the digitalis mixture, to lower the arterial action. He continued to follow the directions which he received very carefully until the latter end of April. On the 21st he came to the dispensary, and I again pursued a careful examination of his symptoms.

His pulse still continued regular, at 110, and synchronous with the heart, but much reduced *in strength*. The carotids beat as violently as usual; the lips were not so purplish as at last visit; countenance distressed, and very anxious; tongue clean; bowels regular; extremities warm; no giddiness of head; left side increasing in size; action of the heart more marked and violent; *fremissement* on the application of the hand distinctly perceptible over the whole side. *Bruit de soufflet* louder, and heard in the same situations as before. Upon applying the stethoscope to the inferior part of the epigastrium, I for the first time in this case heard the musical bruit very distinctly in three different notes, commencing in a grave and rising in the scale to a sharp thrilling tone. I was so struck with its distinctness and accuracy of tones, that I referred to my friend and colleague Dr. Benson, and also to one of the pupils who were present (Mr. Massy), who confirmed my idea of the sound as just described. I then determined to gain the opinion of some more skilful stethoscopists than myself, and I accordingly sent the case to an eminent stethoscopist of this city, from whom I received the following kind opinion, and which I cannot better express than in his own words.

"The case is one of narrowing of the left auriculo-ventricular opening, with regurgitation into the left auricle. The signs are *bruit de soufflet* under the left mamma, which is produced by the passing of the blood through the narrowed opening; and

in the same situation very distinct *fremissement* is felt when the hand is pressed flat against the side. My reason for saying that there is regurgitation, is, that there is very distinct *bruit de soufflet* heard in the back on applying the stethoscope over the fourth dorsal vertebra, which I believe is produced by the passage backwards into the left auricle of some portion of the blood first sent forwards into the ventricle. I should be inclined to say that there is not hypertrophy of the left ventricle, but I cannot be positive, and it is a matter of very minor importance in the case."

Such was this gentleman's opinion of the case, and such was my own, with this exception, that he did not believe in the existence of hypertrophy—I did. The distention of the præcordial region, and the *violence* of the pulsation, made me lean strongly to the opinion that it was so. In other respects he confirmed my private diagnosis. I afterwards sent the child for examination to another skilful practitioner, from whom I received the following answer: "I am not satisfied as to whether the lung is diseased or not. But if not, then the signs appear to be hypertrophy of the right vertricle, and probably a narrowed state of the auriculo-ventricular opening. I know nothing that could be done except to apply an issue and counter irritation."

This advice was accordingly followed forthwith; but before sufficient time had elapsed to enable me to form any just opinion of its effects, a paper appeared in the Dublin Journal for May, in which the hydro-sulphuret of ammonia was so strongly recommended, that I determined to commence its use immediately, without communicating with any person on the subject. I accordingly prescribed four drops to be taken three times daily in some cold water, gradually increasing the quantity. The child was to be brought to me every three or four days. He had not continued the use of the medicine for more than a week before the most marked relief was obtained. His countenance was quite altered, as the great anxiety which had been so strongly depicted on it was much lessened, and when spoken-

to he smiled, and said that he "liked to take the medicine, as it made him so much better." His mother stated that he had not been taking the medicine long ere the oppression was so much relieved, that he began to talk and to play as he was wont to do before he got so bad; and that she came to have the medicine renewed, as he had not got any thing which gave him so much relief. The *frequency* of his pulse was not in the least relieved, but the *violence of the heart's action* was most perceptibly so. The *bruit de soufflet* and the *fremissement* both continued, but the musical *bruit* was gone, and could never be heard again. But at this period I left town rather suddenly, and the patient came under Dr. Benson's care. Without having learned from me the treatment I was pursuing, he, for the same reason which induced me, also prescribed the hydro-sulphuret of ammonia in doses of six drops, three times in the day.

Upon my return to town we both commented on the plan we were pursuing, and agreed in the opinion that he had used the medicine with the most marked benefit. It was accordingly determined on to continue it, and we persevered in its use until its influence was no longer felt. During this period the issue was kept open, discharging freely. The same expression of relief from the drops was repeated by the patient and his mother at each visit; yet the size of the thorax on the left side was evidently increasing.

Towards the conclusion of August his face and limbs began to swell, and the oppression became very great. Diuretic and purgative medicines were frequently administered with partial relief. The abdomen and scrotum became frightfully anasarcous, and he could only lie on his back in a slanting position with his legs kept asunder with pillows, which also served as a support to the enormously distended scrotum.

The pain which he now suffered was so great, and death seemed so imminent, that I was induced to request Dr. Benson to puncture the parts, and allow the fluid to escape gradually, with the hope of affording him temporary relief. A large quantity came

away in the course of the day and night, with much mitigation of his sufferings; but in the evening of the second day inflammation and mortification set in, and on the following morning I received a message from his mother stating that he was dead.

Dissection, assisted by my colleagues Drs. Houghton and Benson; present, Mr. Richard Forster, pupil.—The anasarcous state of the body prevented us from forming a correct judgment of the difference between the size of the left and the right cavities of the thorax.

Upon raising the sternum the heart presented itself greatly enlarged in its general appearance, and occupying the whole of the left inferior and anterior part of the thorax; the left lung was much compressed and reduced in volume, and the inferior part of the right lung was considerably displaced. Upon cutting into their structure, they did not exhibit any appearance of disease.

The heart was next removed from its situation for the purpose of obtaining a more accurate examination of its state. The sac of the pericardium was not to be found, the membrane itself having formed so intimate an adhesion to the whole surface of the heart and to the roots of the great vessels, that it could only be separated from them by the practised scalpel of a demonstrator, the adhesion having all the appearance of being of very long standing, except at the posterior and superior part of the left ventricle, where it exhibited appearances of more recent inflammation. When we cut into the right ventricle it was found hypertrophied to once and a half its original thickness, of firm consistence, and of a natural colour. Among the cells formed by the carneæ columnæ in the walls of the ventricle, were discovered two substances resembling small lumps of fatty substance firmly attached to the lining membrane, and when cut into presenting a small cavity containing a trace of creamy looking fluid on its surface.* The cavity of the ventricle was

* To the best of my recollection these bodies have been noticed before by Dr. Townsend, but *where* I cannot recal to mind.

dilated, and the auriculo-ventricular opening was of a size proportioned to the adjoining cavities. The auricle was also proportionally enlarged in every respect. The tricuspid valves, the pulmonary artery and its valves, and also the carneæ columnæ, were perfectly healthy.

The left ventricle was considerably thickened in substance, but in no other respect exhibiting an unhealthy appearance. The auriculo-ventricular opening of that side was not diminished in size, but, on the contrary, held a proportion to the rest of the heart. At the insertion of the cordæ tendiniæ into the floating edge of the mitral valve, there were firm depositions of a fibro-cartilaginous consistence, which gave to the edge of that membrane a thickened appearance and feel. The internal surface of the auricle was partially covered with a firm gelatinous looking substance, which was internally connected with the lining membrane, so as to present a roughened appearance when scraped with the scalpel. The valves of the aorta were perfectly healthy. At its origin, and for a short distance, the aorta was considerably dilated, bearing an exact proportion to the left ventricle, but rather suddenly assuming its natural size after giving off the great superior arteries. The exact correspondence in the size of all the parts was very remarkable, as well as the absence of those organic changes which we all had so confidently anticipated.

In viewing the above, as we may safely do, as a case of chronic pericarditis, of which the other morbid changes were but the consequence, the following observations suggested themselves: Why was not the real nature of the disease discovered? Andral, in treating of this disease, says, "Sans doute il serait a souhaiter que telle lesion fut toujours indignèe par tel groupe bien determinè des symptomes; mais il n'en est ainsi què dans un bien petit nombre de cas; ainsi chercher a rattacher a une lesion quelconque des symptomes toujours indentiques, c'est retarder le perfectionnement du diagnostic en voulant le simplifier." Thus we have this great pathologist bowing

at once to the difficulties of what had engaged years of study and of observation, and speaking as one who had long been accustomed to encounter them. He subsequently presents us with ample grounds for the exercise of his caution and experience in the history of those cases: "Dans lesquelles la pericardite n'a produit d'autre symptom q'une grande acceleration du pouls, des phenomenes nerveux fort graves, une soubite prostration des forces et la mort."

Such were, in a great degree, the circumstances of the case just related. The great acceleration of the pulse appears to have arisen first from the stimulus produced by the inflammatory state of the parts, and subsequently to have continued in consequence of the excitement caused by organic derangement. Its regularity seemed to have arisen from the equal and corresponding proportions of the various parts. I should be disposed to view the *bruit de soufflet* as a nervous phenomenon, as we have no means of accounting for it upon other principles. The original complication of the case rendered it much more obscure, and in all probability, in a great degree, concealed the stethoscopic signs (if, indeed, they had been sought for,) from discovery. At all times pericarditis is a rare and very obscure disease, but especially when arising out of, or when combined with other diseases. When it takes place from rheumatic metastasis it may exist for some time ere its true nature be discovered, in consequence of the absence of many of those symptoms generally viewed as characteristic of the disease. When combined with pneumonia or pleuritis the multiplicity of symptoms will serve much to embarrass the practitioner; and pericarditis arising in the course of fever may be long overlooked, the symptoms being attributed to other causes. Moreover, there are phenomena connected with it which occur in constitutions and temperaments of different kinds. The tumultuous action of the heart may exist without being accompanied with pains, while in others there is the most distressing and *peculiar* suffering. Irregularity of the pulse is by no means a constant

attendant on pericarditis.—See Andral, Med. Clin., Laennec, on pericarditis, &c. In the case just related, not having seen the disease before it had assumed a chronic form, I cannot speak of its earlier symptoms, but during the year and a-half in which I attended it, I never perceived any irregularity in the patient's pulse. The violence of the heart's action I attributed to general hypertrophy, and the *bruit de soufflet* as before mentioned, to regurgitation of the blood into the left auricle: but I could not, at any period, discover that pathognomonic sign of pericarditis, spoken of by Doctors Sandies and Kreysig, namely, a hollow produced in the epigastrium, during each systole of the heart: the *fremissement* I cannot attempt to account for.

As to the post mortem appearances, may not the hypertrophy have been the consequence of the pericarditis, alone? and upon the following principles: In the natural and healthy state the motions of the heart are carried on in a fluid, by which means the muscular contractions and dilatations are easy and unrestrained, being free from any embarrassment produced by unequal pressure on one particular part, or by constriction on the whole. But when the fluid in which these motions take place is absorbed, and adhesion of the pericardium ensues, the muscles being called into unusual and violent exertion, to compensate for the loss of freedom of motion, according to physiological principles, they increase in a degree proportioned to the requisite force employed to expel their contents; so that, what at first was the effect of nature's efforts to resist disease, becomes subsequently a disease in itself, and forms the greater evil of the two. This proceeding from such a cause (viz. adhesion of the pericardium) produces, necessarily, on similar principles, dilatation of the enclosed cavity. Nature always presents her front to the dangers which approach her, and admirably adapts herself to every situation and circumstance. The restraint thus put upon the external portion of the heart, allows only the *internal* muscular fibres to act with any degree of freedom, and increased growth internally, proceeds in a ratio according to the increased

degree of exertion which necessarily devolves upon those fibres. This would be followed by diminution of the cavity for the reception of the blood, did not nature's efforts still sustain the equilibrium; what is lost in one respect must be gained in another. To accomplish this, the elasticity of the muscular fibre is required to yield to the volume of fluid (fluids being so incompressible) and to permit a gradual dilatation of the cavity, until at length (the muscle and the pericardium both distending pari passu) sufficient room is obtained for its tolerably free ingress. But an unnatural state of the parts is produced, arising from a cause which, as no remedy can remove, must ultimately prove fatal. I have been led to the above opinion respecting this case from the course which the disease followed. The hypertrophy and the dilatation of the parts being so exactly proportioned to each other, and most evident where the adhesion was most intimate, left me at a loss to account for it on other principles. Add to these the fact, that there was no disease of the arteries or valves, and the natural appearance of all the parts, except in the one instance of general enlargement—and one cannot rest upon any other than mechanical principles for an explanation.

The preparation which I have made of the heart exhibits the state of the various parts and the pericardiac adhesion very clearly.

ART. XIV. *A Case of Extra-Uterine Fœtation: with Dissection, &c.* By GORDON JACKSON, M. D., Licentiate of the College of Physicians, and one of the Physicians to the Sick Poor Institution in Meath-street.

JUDITH TEGGS, aged thirty-two, and mother of five children, residing in William-place, off Portland-place, called on me, May 26th, 1828, and stated to me that she had been ailing for several months past, affected with obtuse pain of the right hy-

pochondrium, loss of appetite, and great mental despondency; the latter ascribable, she thinks, to domestic causes; she has been also attacked with mænorrhagia to a great degree, for some time, recurring at short intervals; much distressed, occasionally with abdominal distention accompanied by flatulent eructations. At present there is much abdominal swelling, which she attributes to *advanced* pregnancy; but on close examination, the conditions usually accompanying an advanced period of gestation do not appear to exist. Her appetite is much impaired, countenance indicative of ill health and mental depression; pulse ninety-eight, soft; tongue furred in the centre and towards its base, clean at the apex and sides; bowels in general constipated, and the alvine discharges clay coloured. She expected to have lain in last month; she has had no return of mœnorrhagia for a few weeks back. She states that during former pregnancies, menstruation took place as usual. I advised the adoption of a more nutritious regimen, and removal into the country, and prescribed some medicines to regulate the state of the digestive system.

June 2nd.—On visiting her this day at her own residence, found her labouring under an oozing of blood from the vagina, and on making an examination I found the os uteri slightly dilated, and directed backwards towards the middle of the sacrum, and having superiorly and somewhat anteriorly to it a tumour of considerable magnitude; on minutely tracing this swelling it appeared to be contiguous with, and to form a part of the general uterine surface. Pulse 110, soft, and remarkably compressible; bowels confined; breathing slightly oppressed; countenance anxious, and rather sunken. I advised undisturbed quiet, and to remain in the recumbent posture, with the hips somewhat raised. Ordered an aperient mixture, and an anodyne to be taken at night.

3d—No alteration since yesterday; bowels open from the mixture. Her drink to be acidulated with lemon juice.

Repitatur haustus anodynus horâ somnio.

4th. As yesterday.

Contr. omnia.

5th evening, 8 o'clock.—Sat up this day for some time, and eat animal food of her own accord. She is now flushed in the face; much restlessness; pulse 120, stronger and fuller than yesterday; countenance anxious; the oozing per vaginam has somewhat increased.

V. S. Brachio ad ʒxii.

St. ʒi. Infusi Rosæ Acid. 2dis. horis.

St. Pilulas ii. purgantes nocte.

6th.—A bad night; blood drawn from the arm does not exhibit a sizy appearance; the crassamentum is soft; since my visit of yesterday she has sunk much. At present, 1 o'clock, p. m., there is much jactitation of the superior extremities, insatiable thirst, with constant vomiting, and a predilection for cold water. Pulse 130, weak and exceedingly small; countenance extremely anxious; breathing quick and oppressed; shoulders obliged to be raised from extreme orthopnœa; to have some burned brandy and wine occasionally, and to take the following mixture:—

℞ Carbon. Ammoniæ ℈i.

Misturæ Camphoræ ʒvi.

Liq. Anod. Hoffm. ʒii.

Tincturæ opii. gt. xx.

Syrupi Simpl. ʒss. ɱ

St. Coch. ii. ampl. omni horâ.

Quamprimum injectr. enema terebinth. cum Liq. Etheris olios ʒss.

3 o'clock, P. M.—Visited her in conjunction with Surgeon Beavan, whom I met by accident in the street, and who was good enough to visit the case with me. Mr. B., on making an examination per vaginam, deems the uterus gravid; the diffusible stimuli here produced considerable re-action; less jactitation; pulse weak.

Pergat in usu Misturæ Ammon.

9 o'clock, evening.—Skin hot; thirst urgent; some sleep since last visit; countenance collapsed; pulse quicker and weaker than at last visit.

Habt. Haustum Anodynum.

2 o'clock, A. M.—Called out of bed to see her; excessive pain in the hypogastric region; urgent thirst, with inability of retaining fluids on the stomach; wishes for cold water; pulse nearly imperceptible; countenance exsanguineous, collapsed, and expressive of distress; extreme restlessness; the diffusible stimuli have lost the power of exciting the circulation; the oozing from the vagina continues. In consultation with Dr. G. A. Kennedy, of Summer-hill; Dr. M'Dowell, of Eccles-street, and Dr. Darly, then one of the assistants to the Lying-in Hospital,* from the extreme state of exhaustion present, it was thought feasible to adopt transfusion. The husband fainted, however, from the loss of a few ounces of blood; which circumstance, together with the want of a sufficient supply of warm water, rendered the postponement of the operation unavoidable. It was, however, a few hours after performed by Surgeon M'Dowel in the most adroit and efficient manner possible; the pulse momentarily returned at the wrist; but in a few hours afterwards she died.

7th June.—*Dissection.* I examined the body twenty-four hours after death, assisted by Dr. G. A. Kennedy, of Summer-hill, Dr. Montgomery, Professor of Midwifery to the College of Physicians, Drs. Darly and Evory Kennedy, then Assistants to the Lying-in Hospital, when the following circumstances were observed:—

The body was universally remarkably colourless, as it is observed to be in persons who have died of hæmorrhage, and the

* The zeal and benevolence evinced by those gentlemen in thus promptly affording their gratuitous assistance at this unseasonable hour, cannot be too highly commended.

abdomen was as full and prominent as it would be at the sixth month of utero-gestation.

On dividing the integuments of the abdomen, that cavity was observed to be completely filled by extravasated blood, the greater part of which was firmly coagulated, while some remained still fluid.

In the removal of this Dr. Montgomery took up from the pelvic cavity a coagulum about the size of a goose-egg, and pushing his thumb through it, found in it a fœtus of the size represented in the plate, and still surrounded by its amnion; it appeared to have arrived at about the tenth week; this was thrown into water to cleanse it from the blood adhering to it; but to our surprise, it had not lain there many minutes until it dissolved away completely. The uterus lay across the pelvis with its fundus behind the pubis, and its orifice pointing towards the middle of the sacrum as in anteversion; this change of position appeared to be owing to the presence and pressure of a tumour about the size of an orange, which seemed to be connected with the uterine appendages of the left side.

The parts were now carefully dissected from their attachments, and removed from the pelvis; but an immediate examination of a satisfactory kind being impossible, owing to the presence of the woman's friends, it was deferred until it could be done more at leisure by Dr. Montgomery, to whom I presented the parts for preservation in his museum, and who has favoured me with the following account of the examination and observations thereon.

"The parts removed from the pelvis, and consisting of the uterus with its appendages, present universally over their whole surface the marks of a very active and long continued inflammation, false membranes being found in every direction, and union having taken place in a great variety of places, so as to confound many of the parts inextricably.*

* See Preparation, No. 132.

"This altered condition is more particularly remarkable at the left side, where the tumour is, which consists of the ovary, tube, and broad ligament of that side, all of which are greatly increased in size, and otherwise remarkably altered in structure.

"The fimbriated extremity of the fallopian tube is firmly united to the coats of the ovary, and both parts exhibit exactly the condition that might be expected to arise from their having been greatly enlarged, and ultimately burst by some body distending them from within. In the centre of the rent ovary is seen the corpus luteum, so separated from surrounding parts, that it appears like a yellow berry accidentally laid there.

"A fact connected with the history of this woman's case appears to me most interesting to mention here, as having had, in all probability, a powerful influence in the production of the fatal accident.

"Her sister mentioned that on the Easter Sunday before her death, her husband being intoxicated, and wishing to get out of the house, she stood with her back against the door to prevent his exit, while some other person held him back; from whom he broke away, and rushing towards the door, stumbled and fell forward, striking his wife, while in the full impetus of the fall, with his head, just over the pubis. The blow was tremendous, and laid her prostrate and senseless; she afterwards fainted several times, and for three weeks continued, as the friends expressed themselves, 'in a very poor way,' and was never afterwards free from pain in the pubic and pelvic region. Now, this accident occurred on the 7th April, which was Easter day of that year, and of course exactly *nine weeks* before the death of the woman, and the fœtus found was of the size represented in the plate, which corresponds to such a period of gestation. Hence it seems extremely probable that conception had just taken place before the accident occurred to the woman, in consequence of which, violent inflammation seized on the whole uterine system, and the extremity of the tube becoming

intimately united to the surface of the ovary before the impregnated ovum had effected its escape from the ovary and passage through the tube, the ovum was detained, and becoming developed in the ovary until the coats of that organ gave way to its increasing size, it then protruded into the attached extremity of the tube, which it distended as its growth increased, until at length the coats of the tube giving way, the fœtus escaped into the cavity of the abdomen, where it was found, and the lacerated vessels poured their contents into the same cavity until the whole of the vital fluid was extravasated, and death produced by internal hæmorrhage.

" The ovary of the right side was converted into a dropsical cyst, and its tube into a *cul de sac*, filled with fluid blood, as was also the cavity of the left tube between the sac, where the ovum had lain, and the uterus: might not this have been the source from which was derived the blood which continued to ooze from the vagina for some days before death? The uterus was as much enlarged and altered in external appearance as it would be at the same period of natural gestation; the os uteri had undergone the usual change of form consequent on impregnation; the muscular parietes of the organ were thickened, and its cavity was lined with the decidua.

" This case is, in one respect, I believe, peculiar, the ovum having engaged in its developement both the ovary and tube, so as to constitute both ovarian and tubal pregnancy at the same time; with regard to the cause of its occurrence, supposing that to have been the external violence, it is by no means without more than one parallel, cases having from time to time been put on record in which violent impressions made on the nervous system about the time of conception, whether arising from mental motion or bodily injury, have produced a like derangement in the generative process, and been followed, as in this case, by extra-uterine gestation.

" Lallemand relates a case in which he attributes the accident to a fright at the moment of conception, which happened in October. The patient died in March, a fœtus was found in

the abdomen, and the chorion was adherent to great part of the lining of the pelvis.—*Nouv. Journ.* tom. ii. p. 320.

"Dr. Armoni, in a very interesting paper on extra-uterine pregnancy, makes the following observation on one of his cases:—

"A circumstance had occurred to this patient, which is, perhaps, worthy of being mentioned. About three months previous to her being first visited by her surgeon,* a violent altercation had taken place between the deceased and a neighbour, which had even proceeded to blows. *This occurrence, which she thought was the cause of her illness, seems to have taken place immediately after conception,* and it is not improbable that it might have been productive of the effect which she assigned to it."—*Glasgow Medical Journal,* vol. iii. p. 158.

"In the *Archives Generales* for February, 1832,† a case is related in which the accident is attributed to the lady having been suddenly much terrified while receiving the embraces of her husband, by the fall of a stone thrown against the window of her bed-chamber.

"Astruc is of opinion that strong mental impressions, such as fear, are sufficient to produce this kind of accident: and, in proof, he says that unmarried women are much more frequently the subjects of it than others.—Vol. v. p. 106-7. Kruger also maintains the same opinion."

REFERENCES TO THE PLATE.

The Uterus and its appendages are represented of half the size in which they were found.

A Is the Uterus, altered in form and appearance by the false membranes formed on every part of its surface.

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* At which time she supposed herself to be three months pregnant, to which supposition the size of the fœtus, subsequently found, exactly corresponded.

† See Dublin Journal of Medical and Chemical Science, vol. ii. p. 137.

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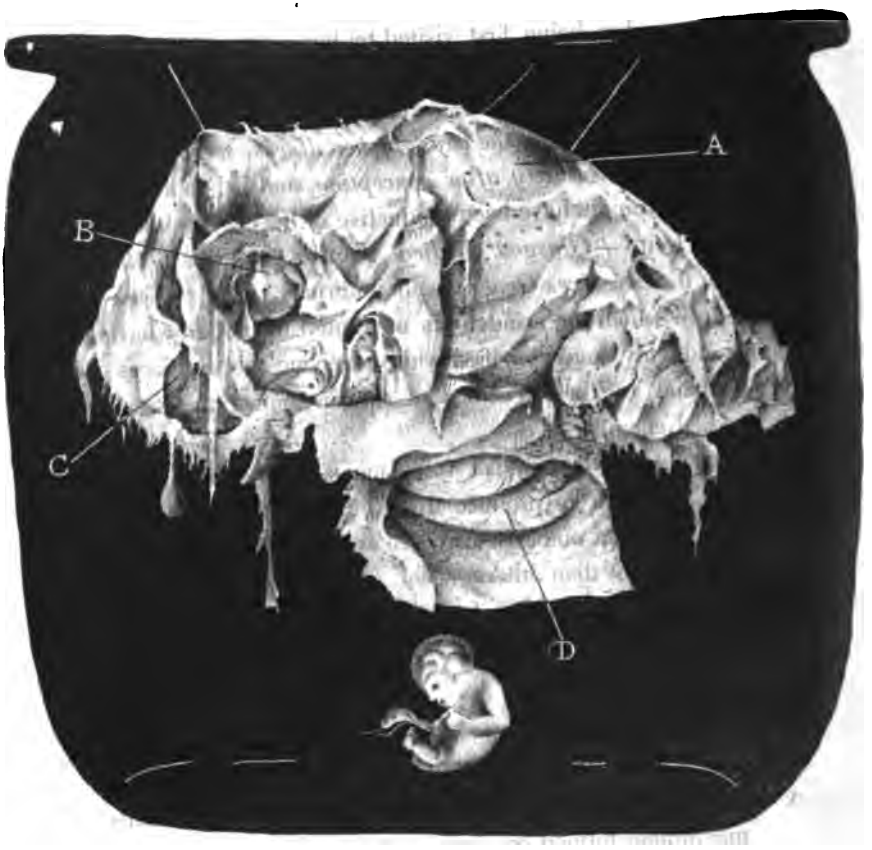

See preparation N° 132 in Dr Montgomery's Museum.

Lithographed by W Lover *from a drawing by*

P. Kennedy

Allen's Lithog Trinity Str

B The Corpus Luteum in the midst of the shattered remains of the ovary.

C The Fallopian Tube rent open.

D The Os Uteri altered as in time of pregnancy.

The Fœtus is represented as nearly as possible of its real size.

ART. XV.—*On Acute Inflammation of the Brain.* By PHILIP CRAMPTON, M.D., F.R.S., Surgeon General to the Forces in Ireland, and Surgeon in Ordinary to the King.

ACUTE inflammation of the brain, as an idiopathic disease rarely falls under the observation of the hospital surgeon, while there are very few disorders with which he is more familiar than inflammation of the brain, as a consequence of external injury. In this last case, however, the symptoms which denote cerebral inflammation are obscured, or it may be altogether effaced by certain other concomitant affections of the brain necessarily attendant on the violence to which the organ has been subjected. The injury (for example) which was sufficient to excite inflammation of the membranes, would in a great majority of instances, be also sufficient to cause more or less *concussion* of the brain, a *compression* of its substance, whether by extravasated blood, or depressed bone, so that the proper signs of inflammation might be scarcely, if at all, distinguishable; and, on the other hand, the symptoms which arise during the more advanced periods of cerebral inflammation are often identical with those which are considered as almost peculiar to compression and concussion. Thus it often happens that the insensibility, or coma, which immediately succeeds to a severe shock to the brain, merges into the coma which is the result of extensive inflammation, with or without effusion, and death takes place without one intervening moment of sensibility, or one sign which can enable us to determine whether the insensibility was to be

attributed to the *concussion*, the *compression*, or the *inflammation* of the brain.*

To the systematic pathologist, who would arrange the phenomena of disease as he would arrange objects of natural history, giving to each its name and place in the system according to its external sign, this must be rather a discouraging view of the subject; nor can it be agreeable to the diligent student, who is deeply imbued with the refinements of the French school of pathology, to find that he must unlearn at the bedside so much of what he has learned in his closet.†

It will be seen that I do not limit the term *inflammation of the brain* to inflammation affecting the parenchyma, or medullary substance of the organ, as distinguished from its mem-

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* It is not usual to consider active inflammation of the brain, independent of effusion, as a cause of coma; but perhaps no fact in pathology rests on more unquestionable evidence. (See Martinet and Parent, Recamier and Abercrombie.) "All these symptoms (slowness of pulse, followed by frequency, squinting, double vision, dilated pupil, paralytic symptoms, and *perfect coma*, we have seen may exist without any effusion, but in connection with a state of brain which is active or simply inflammatory."—*Abercrombie*, p. 54.

† Many of the French pathologists not only pretend to distinguish inflammation of the brain from inflammation of its different membranes, but they indicate, with great minuteness, the symptoms which denote the different degrees, stages, and even seats of cerebral inflammation. That these nice distinctions should be received with some degree of caution will appear from the fact, that the highest authorities maintain, in some of the most important points, the most opposite opinions. MM. Martinet and Parent (for example) after a careful examination of 116 cases of what they considered inflammation of the membranes of the brain, had come to the conclusion, that when inflammation of the arachnoid membrane is seated on the convex surface of the hemispheres, delirium sets in early, and is the prominent and characteristic symptom; while if it occurs at the under-surface and base of the brain, coma is the more usual attendant, and sets in early. M. Cruvelhier, on the other hand, affirms that the affection which he terms *Meningite sous-arachnoidienne comateuse*, when seated on the *convexity* of the hemispheres, is characterized by stupor, gradually increasing to coma, whilst headach, with increase of sensibility and delirium, are strangers to it.—*See* article, *Inflammation of the Brain, in the Cyclopedia of Medicine.*

branes; but include under that term, inflammation of the parts within the encephalon generally.

For, in the first place, we are not warranted, in the present state of our knowledge, in giving any other seat to inflammation but the vascular tissues which form, support, and involve the molecules which constitute the parenchyma of the different organs; but the vascular tissue which invests the medullary molecules, is universally admitted to be derived from, or continuous with the pia mater.* Inflammation of the substance or parenchyma of the brain, therefore, anatomically and physiologically speaking, can mean nothing more than inflammation of that part of the pia mater which passes into the interior of the brain, and invests its molecules. This would be no better than verbal criticism, if it could be proved that inflammation of the pia mater on the *surface* of the brain was invariably attended by one train of symptoms and inflammation of the same membrane in the *interior* of the brain with another; this, however, is so far from being proved, that Cullen "denies the possibility of assigning exactly the seat of the different acute affections within the head, either by reference to the symptoms during life, or the appearances after death;" and therefore includes under the general term *Phrenitis*, the inflammations of the different structures within the cranium, whether seated in the substance of the brain or in its investments." Pinel,† who admits that "to preserve the unity of his system it would be necessary to describe separately *cerebritis* and *meningitis*, and to cite cases in which the existence of each could be distinguished by a special train of symptoms," felt himself obliged "to include under the one head '*Encephalitis*' the general history of inflammation, whether seated in the membranes or in the substance of the brain." And lastly, Dr. Abercrombie,‡ whose authority must be con-

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* See Prochasca Op. Minora, Pars. i. p. 342. Joseph and Charles Wenzel de penitior Struct. Cerebri, p. 24.

† Nosographie Philosophique.

‡ Pathological and Practical Researches, p. 6.

sidered as not inferior to that either of Cullen or Pinel, admits that "our knowledge of the subject is not sufficiently matured to enable us to say with confidence what symptoms indicate inflammation of the substance of the brain as distinguished from inflammation of its membranes." With such practical authorities in support of the anatomical objection which I have ventured to suggest to the division of cerebral inflammation according to its seat in the membranes, or in the substance of the brain, I feel that I am warranted in employing the term *inflammation of the brain* in the general sense in which it is used by the distinguished pathologists whom I have just named, at least until our knowledge of the subject is more "matured" than it appears to be at present.

The following case is chiefly interesting to the surgeon, as it exhibits an instance of pure active inflammation of the brain uncombined with any of those consequences of external injury with which he is accustomed to see it associated; he will recognise, nevertheless, many of those symptoms which are described in systematic works as peculiarly denoting "pressure on the brain," and he cannot fail to be struck by the absence of certain other symptoms which are described as pathognomonic of inflammation of that organ.

Case.—Mr. J. Cooper, aged 17, (son of Mr. Cooper, now residing at No. 47, Leeson-street), a remarkably strong and healthy youth, whose mother, however, is of a very delicate constitution, exerted himself more than usual in gymnastic exercises on Saturday the 11th of March, 1832. On the following morning his mother observed that he looked ill, and on being questioned, he complained of a pain across his loins, but felt no other indisposition. He attended divine service in a hot and crowded church, and felt much oppressed by the heat; on going into the open air, he encountered a sharp north-east wind, and was conscious of a sudden chill, which he was unable to shake off during the remainder of the day; he dined abroad, ate his dinner with appetite, and seemed peculiarly animated

during the whole of the evening. He awoke at midnight with an excruciating pain in the ball of the left eye, and in the temple of the same side. At five o'clock he called up his father, (who slept in the room with him), and told him that "he could not endure the pain he was suffering—that he was sure his eye would burst," and altogether betrayed a degree of impatience and irritability that did not belong to his character. He was visited at an early hour in the morning by Mr. Nicholls of Dawson-street, who gave him some purgative medicine; the pain continued with great severity during the day, and was accompanied with nausea and reaching. The medicine operated freely in the evening, and the pain was much relieved. During the night, however, it recurred with increased violence, and at five o'clock in the morning (of Tuesday) he requested that some leeches might be applied to his temple. Twelve leeches were accordingly applied at eight o'clock; but they had scarcely fallen off when the pain became more violent than ever; he now, for the first time, began to rave; he imagined that the gymnastic pole was pressing against his back, and cried out to those who were about him "to take it away." He moaned incessantly, and sometimes almost screamed from agony. So much of the history of the case I learned from his mother. When I visited Mr. C. for the first time at six o'clock on Tuesday evening, I found him lying on his right side, his eyes closed, his mouth half open, and his head thrown backwards; his face was deadly pale, (the leech-holes were still bleeding), the breathing not hurried, but he moaned almost incessantly, like one who is suffering in his sleep. Sometimes he cried out with a voice of agony, "Oh dear, oh dear, what shall I do?" and then muttered indistinctly. When roused, however, he was perfectly rational, but was impatient of being questioned; sometimes, when spoken to, tossing himself to the far side of the bed, and hiding his head in the bed-clothes. On being questioned, he said, "the pain had left his eye, and had settled in the back of the neck," where the slightest pressure seemed to cause se-

vere pain. In short, his whole aspect and manner was that of a person who had received a severe blow or fall on the head, and who was beginning to awake from the deep coma of *concussion*. The pulse was 84, soft and regular while he remained at rest, *but it rose to* 120 *when he moved, or was raised in the bed*, establishing another remarkable resemblance in the symptoms to those attendant on concussion: skin hot and moist. Bowels had been moved three times; urine natural. Twenty ounces of blood were ordered to be taken from the back of the neck by cupping; two grains of calomel every hour; a cold lotion to the shaved scalp.

Wednesday, 15th, 9 o'clock, A. M.—(Mr. Colles in consultation.) Aspect the same as yesterday, except that the features exhibit some appearance of collapse. Pulse 100, soft and regular, but, as before, rendered more frequent by motion. Raved a good deal during the night, and was much more comatose; he was still, however, capable of being roused if spoken to loudly, and then conversed rationally, although reluctantly; his hearing was obviously impaired, and his mother was of opinion that he was blind; the pupils were fixed, but of a medium size. Forty leeches to the forehead and temples, a blister to the back of the neck, the calomel, combined with small doses of Dover's powder, to be continued.

6 o'clock, P. M.—Deep coma; breathing hurried and stertorous; slight lividity of the face; body reeking with perspiration; pulse 140, small but regular. At 10 o'clock, P. M., the respiration was 70 in a minute, and fully stertorous; pithy mucus flowed from the mouth; the radial pulse was extinct; and he died without a convulsion, at 9 o'clock on the following morning, about 80 hours from the commencement of the disease, reckoning from the time when he first complained of pain in the eye.

Inspection, 22 hours after death.—On raising the dura mater, the whole surface of the hemispheres appeared of a pale greenish colour, in consequence of the effusion of a thick

green-coloured pus beneath the arachnoid: that membrane preserved its normal structure and transparency, but the pia mater was highly vascular, and its surface flocculent; the more fluid purulent matter was intermixed with portions of a greenish matter of some consistence, which might be called adventitious membrane: this substance chiefly followed the course of the sulci which separate the convolutions, dipping between them to the depth of half an inch. The chief seats of the purulent effusion were the inferior surface of the anterior lobes of the cerebrum, the whole of the base of the brain and the cerebellum, but especially the pons and medulla oblongata. On squeezing the pituitary gland, two or three drops of purulent matter escaped through the cut extremity of the infundibulum; the brain itself was of a natural colour and consistence, but appeared to be more vascular than in the healthy state; there were about two ounces of limpid fluid in the ventricles; the choroid plexus was unusually pale.

The circumstances most worthy of notice in this case, are:

1st—The absence of "*delirium ferox*," *convulsions*, or *paralysis*, either spasmodic or atonic symptoms, which are described by nosologists as essentially characterising inflammation of the brain, or its membranes.

2nd—The resemblance which the whole assemblage of symptoms presents to those which are usually thought to denote concussion of the brain, from external violence.

In the following case, as the disease terminated favourably, it is impossible to speak with decision as to its nature or precise seat; the symptoms, however, were such as clearly denote acute inflammation of the brain, and such was the opinion which was formed of the disease by Dr. Cheyne, as well as myself. At all events, it must be important to know that such symptoms (whatever may be their nature) may be successfully combated by the vigorous employment of the means which are most effectual in subduing *active membranous inflammation*, wherever it may be seated.

Case.—Mark Moore, aged 10, (son of Hugh Moore, Esq., of Eglantine, in the county of Antrim,) a fine intelligent boy, but of a delicate form, auburn hair, hazel eyes and forehead unusually developed, particularly in the temporal regions, was attacked, while travelling through Wales with his father, by intense pain of the head, accompanied with vomiting and somnolency. I saw him fifteen hours after the commencement of the attack; he lay on his side, with his head thrown back and his eyes half closed; the face flushed, but without a circumscribed patch of red on the cheek; he moaned almost incessantly, sometimes shrieked, started up on his seat, looked about wildly, and then tossed himself to the opposite side of the bed. Pulse 120; skin hot, but moist; tongue white in the middle and bright red at the edges; stomach irritable; bowels constipated.

If, with Rostan, Conradi, and Coindet, we consider the hydrocephalus in its acute form as nothing more than acute cerebral inflammation "*Cephalite interne hydencephalique*," it will be unnecessary to attempt to establish a diagnosis between the affection which I have just described and acute hydrocephalus, commonly so called, but all practical physicians, who are more anxious about distinguishing the symptoms of disease than constructing nosological tables, will at once recognise, in the case of Mark Moore, symptoms which mark a disease essentially different from any form of hydrocephalus with which they are acquainted. This is not the place for a laboured disquisition with a view to establish an exact diagnosis between acute inflammation of the brain and acute hydrocephalus; I shall, therefore, merely observe in passing, that in *hydrocephalus* the quickness of pulse, heat of skin, and other signs of fever, attendant on acute inflammation, bear no proportion to the manifestation of pain and general *nervous irritation* belonging to that most unmanageable disease. That in the early period of acute inflammation of the brain there never is one moment of that calm and profound sleep, or coma, (call it

which you will,) which resembles the stillness of death even more than a tranquil sleep. But, be this as it may, it appeared to me that I had to deal with an acute inflammation of the brain, and I took my measures accordingly. I opened, on the instant, the jugular vein, and took away at least twelve ounces of blood; twenty leeches were applied to the forehead and an iced lotion to the shaved head; two grs. of calomel and one of Dover's powder every two hours; iced barley water for nourishment. The symptoms were completely relieved for six hours, but returned, at the expiration of that period, with increased violence. The bleeding was repeated at midnight, and leeches were applied in relays, twenty at a time, so as to keep up a continued flow of blood from the skin of the head. The inflammatory symptoms, accompanied with delirium, recurred five successive times, at the intervals of 6, 5, 10, 11, and 14 hours; the bleeding was repeated on each of these occasions, and on the eve of the fourth day the system was brought fully under the influence of Mercury. The recovery was rapid and complete. The patient is now, after an interval of eighteen years, in the enjoyment of perfect health. I had the advantage of Doctor Cheyne's valuable assistance in the treatment of this important case, after the second day.

In my quality of "reporter," I have to state, that Fagan (whose case I reported up to the 20th of July in the fourth number of this Journal) is again under treatment in Steevens' Hospital. It appears that after he was discharged from hospital he led a very irregular life, having frequently been seen drunk; that he suffered after each debauch from severe pain of the head; and that on the 22d of August he nearly lost all power in the right arm and hand, and the right side of the face was obviously affected by paralysis. On this account he was re-admitted on the 24th of August.

The following statement is abridged from the hospital journal: John Fagan, re-admitted August 24th, complaining of severe pain in the seat of the original wound; and although his

head-pain is not constant, the paroxysms recur several times in an hour, and last for two or three minutes; vomits occasionally; vision indistinct; pupils dilated, and very sluggish; strength and sensibility of the right arm and leg much diminished; pulse 100, soft and easily compressible; tongue clean; bowels free; memory very defective, particularly with respect to names and recent events; but the defect is not confined to the faculty of memory, as, with few exceptions, he cannot repeat proper names, but miscals almost every thing; although he can perfectly describe the use of it, he calls, for instance, a watch, a gate; a book, a pipe, &c.; a pipe is the word that he pronounces most frequently; it is remarkable, however, that the moment he employs a wrong word he is conscious of his mistake, and is most anxious to correct it. The cicatrix of the wound, which is six inches long, and half an inch broad, is *raised*, particularly at its centre, above the level of the scalp; it is of a purplish red colour, tense, and shining, very painful to the touch; and at the centre, which is the softest and most prominent part, there is a strong pulsation, obviously synchonous with the radial pulse.

26th. Yesterday had several severe paroxysms of pain, accompanied with grinding of the teeth and contortions of the features, and succeeded by complete insensibility, which lasted for five or six minutes, during which time the pulse fell to 50 in a minute. Twenty leeches were applied round the cicatrix, a blister to the nape of the neck, and a cold lotion to the head; purgative pills.

27th. No return of paroxysms; pain relieved.

28th. Several paroxysms of convulsion, followed by stupor; cicatrix more tense and red, but the fluid which it covers disappears on pressure, and returns when the pressure is removed; pulse 72, and regular; tongue foul; bowels open. Continued to improve; paroxysms becoming less frequent until the 4th of September, when he had violent vomiting followed by convulsion, after which he remained insensible for several hours; pu-

pils dilated; pulse 54.; respiration natural; a small opening was made into the prominent part of the cicatrix, and two drachms of healthy pus were discharged.; *the pulse immediately rose to 68; he sat up in the bed, answered questions rationally, and said he was quite free from pain.*

7th. Continued free from pain or convulsion; the little opening is healed, and the tumour is as large as before; a larger opening was made into it, and a small quantity (about half a drachm) of bloody serum was discharged.

Oct. 9th. Has had no pain or convulsion since the 4th of September, when the abscess was opened; he appears in perfect bodily health, with the exception of some remaining weakness in the right arm and hand, and some slight confusion of vision; the cicatrix is perfectly on a level with the head, and there is no sensible pulsation in the seat of the former abscess; the mental phenomena are as before described, and are most remarkable; he speaks correctly, and even fluently; describes his sensations with great clearness, but avoids all proper names, he says, (for example,) "I have a great weakness and numbness here," (pointing to his shoulder,) "and along here," (drawing his finger along the arm to the palm of the hand;) "but no pain." "When I sit up suddenly I don't see rightly; but I soon see as well as ever." He counted 5 on his fingers; but could not say the word "finger," though he made many attempts to do so. He called his thumb, "friend." When desired to say "stirabout," he said, and invariably says, "buttermilk;" but was immediately conscious of his error, and said "I know that's not the name of it." Sometimes (as in the last instance) one could trace the association of ideas through which he was led to the misnomer: stirabout and buttermilk being associated in the mind of every man of his class in this country; but in the greater number of instances, no such association could be traced; but this should excite no surprise, as the disturbing cause, which was of sufficient force to dissociate the

idea of the *name* from the *thing*, would, naturally enough, be sufficient to disturb the faculty of "association." Generally, these experiments, if they may be so called, were performed in the presence of Dr. Marsh, and a great number of the pupils of the hospital.

Considered separately, these cases possess but slight claims to attention, either on the ground of their singularity, or, of their furnishing any new views with respect to the pathology or treatment, of diseases and injuries of the brain. It appears to me, however, that when viewed in connection with one another, they acquire some degree of importance. By placing a case of acute inflammation of the brain arising from external violence, and therefore probably complicated with some other organic lesion, beside a case of acute inflammation, arising idiopathically, we are the better able to compare the symptoms of each with the other, and separate those which are the proper signs of inflammation from those which belong either to *concussion* or *compression* of the brain.

In the instance of Fagan, (for example,) the symptoms the early part of the case, though less acute, were of the same character as those which occurred in the case of Mr. Cowper; we had in both violent pain of the head, great nervous irritability, followed by stupor, and that peculiar kind of delirium in which the patient seems like one talking in their sleep, from which, however, they can be roused into perfect, though transient rationality. In both, the pulse was quick, and the skin hot. In the case of Mr. Cowper, the inflammation terminated in *the effusion of purulent matter, generally on the surface of the brain, and of serous fluid into the ventricles*, and this was attended with blindness, deafness, and derangement of the functions of life generally; but there were neither convulsions nor paralysis. In the case of Fagan, the inflammation terminated in *circumscribed abscess on the surface, or within* the substance of the brain, and *then* appeared the symptoms which denote *irritation* and *compression* of that organ: namely, con-

vulsion, followed by stupor, paralysis of the side opposite to that on which the injury has been inflicted, destruction or suspension of one or more of the intellectual functions. That these were the proper signs of *compression,* (as distinguished from *inflammation* or *concussion,*) appears from the fact, that the moment the compressing cause was removed by the evacuation of the matter, the symptoms disappeared.

Should these views be confirmed by numerous observations collected from various and independent sources, one important step will have been made towards elucidating the pathology of the brain.

P. S. I am anxious to correct an expression which I have made use of in the first part of this paper, and which must be ambiguous, since it has appeared so to so able and acute a critic as the Editor of the Medical-Chirurgical Review. When I said that "the convulsions which not unfrequently appear shortly after a severe injury of the head, are *of a very different character* from those which are caused by the disorganization of the brain, consequent on inflammation," I considered that *difference of character* to have relation to the cause and to *the result* of the convulsion only: the *first being functional, and attended with but little danger; the second organic, and almost invariably the forerunner of death.* I fear we are still far, very far indeed, from that accuracy of knowledge with regard to convulsive diseases, which would justify an attempt at discriminating these affections by a reference to their external characters. Who is there who is able to distinguish an epileptic paroxysm, caused by an irritation propagated from the stomach to the brain, from a similar affection caused by the irritation of a bony spicula, acting on the brain itself—or even from the convulsion which so often accompanies inflammation of the brain in infants?

ART. XVI.—*Observations on the Treatment of Varicose Veins, with the Description of a Bistoury employed for their Division.* By J. M. FERRALL, Surgeon to the Asylum for the Recovery of Health, and Dispensary for Scrofulous Complaints.

WE are occasionally consulted on account of the pain or inconvenience arising from a varicose enlargement of the branches of the saphena. A considerable variety is observed as regards the degree of suffering, the constitution of the individual, and the probable cause of this sometimes dangerous affection; a corresponding difference of management is required, in order to avoid incurring more serious evils, while we aim at the removal of the distress, for which we are requested to advise.

Thus, in one case the complaint may consist of simple enlargement of the superficial veins, in one or more clusters, occupying the calf of the leg or instep, a sense of distension, and some degree of difficulty in using the limb. Or perhaps the principal annoyance to the patient may arise from the deformity occasioned by the bulk of the distended veins. This case is met with in younger subjects, and the disease has not been of long standing. In another case we shall find, that, in addition to the more general distension of the veins, there is an œdematous condition of the limb; the integuments about the ankle are discoloured; they have a brownish or dusky-red hue, scarcely altering on pressure, and are either covered by a branny cuticle, or exude a watery fluid of an acrid nature, which heats and excoriates the neighbouring skin.

A third shall present little or no redness of the integuments; but we shall find, on one spot perhaps, a crust or scab, which, we are told, falls off, and is renewed from time to time. The spot is peculiarly painful, and is surrounded by an inflam-

matory blush. This case is not uncommon in pregnant women, but is also met with in men. It is a case in which hemorrhage occasionally occurs.

A varicose state of the veins may exist for an indefinite period without any breach of surface in the integuments. Some degree of œdema is often found to precede this occurrence. The outline of the malleoli is obscured; a few of the points from which the exudation escapes become perceptibly enlarged: they coalesce by degrees, and a small ulcer, generally about the inner ankle, is produced. The tension of the skin and the resistance of these bony projections, perhaps, determine the situation of the opening, though it frequently occurs at a little distance above them.

Another mode by which I have observed ulceration to occur, is the formation of a minute abscess beneath the skin. This breaks, and according as it is treated, degenerates into a sore at once, or forms a scab, which is rubbed off, and is succeeded by others that protect a fistulous orifice in the skin, communicating with the little cavity beneath. In the former case, the ulceration commences in the skin, which is more extensively diseased, and the ulcer thus produced is difficult to heal. In the latter, the breach of surface is consequent on the formation of a minute abscess, from inflammation of the cellular membrane in front of the distended vein; and the morbid state of the integuments is limited to the immediate neighbourhood of the opening.

The first is met with in persons of unhealthy habits, generally past the meridian of life; and is often connected with a morbid condition of the more deep-seated vessels of the limb. The second may occur in a better constitution, when the parts are subjected to the inconvenience of the erect position for many hours in the day. It is often observed in the varix of pregnancy, in which case I have known the ulcer to heal during the period of confinement.

An accidental injury to a varicose leg may degenerate into an ulcer, and even the rubbing of the part by the patient, on account of the heat and itching, may determine its occurrence.

It is not my intention to engage in a discussion of the causes, remote or proximate, of varix of the saphena. There are not data to justify conclusions of any real value. My object is to remark upon the modifications of treatment applicable to some varieties, local as well as constitutional, which present themselves in the complaint. One or two observations, however, are admissible, because they seem necessary to be borne in mind in considering the means of cure.

Among the assigned causes, preternatural weakness of the coats of the veins, rupture of the valves during violent exertion, and a diseased state of the deep-seated veins, have been, in succession named. The latter was mentioned by Mr. Abernethy in his earlier lectures, and, for many reasons, deserves to be considered with respect.

With regard to the first—namely, "preternatural weakness of their coats," it may be observed, that the condition in which we find those vessels in disease, is clearly one of hypertrophy. Not only is their calibre enlarged, but the thickness of their coats is considerably augmented, and the increased nutrition of the tube is further evident in its actual elongation.

The second cause conjectured, "rupture of the valves," may very possibly occur during violent exertion, when respiration is for a time suspended, and some delay is occasioned in the venous trunks. But it is quite possible to conceive the production of varix without any injury to the valvular structure of the parts. There is no class of vessels more yielding, perhaps, than veins: their power of adapting themselves to circumstances is evident in the great varieties of fullness and shrinking occurring in the same individual, during the different states of exercise or rest, heat or cold, plethora or the wasting of disease. Bichat

dismissed the question of the relative area of the arterial and venous systems, as altogether futile, because, he remarked, whatever might be observed of the arteries, the contents of the veins were every moment subject to change.

Under violent exertion, then, it is easy to conceive that those vessels should admit of distension to a degree, which would frustrate the office of the valves, by opening a space, the dimensions of which would be considerably greater than the sum of their area in the healthy state. A habit of this kind would possibly occasion a process of nutrition to be set up in order to enable the veins to embrace and support the increased volume of blood. Increase of diameter follows naturally from the augmentation of their contents, but increased thickness of the parietes would appear to be essential to the circulation in the part.

It has been asserted that the circulation in varicose veins is slower than in other parts. The force with which the blood is projected from them when they are opened by ulceration or wound, would however indicate a very active movement of their contents. It has also been said that the temperature of the limb was under the ordinary standard: I can only say, that I have not seen any case of varix where the heat of the integuments covering the veins was not two or three degrees higher than that of the thigh near the groin.

The habits and occupations of persons most commonly the subjects of this disease, would certainly induce a belief, that muscular exertion in a standing position, is a common cause of its production. I am aware of more than two or three persons who labour under scrotal hernia, nearly coeval in its history with the appearance of the varix.

What is of more consequence, however, in practice, is, that in some instances, it is very much a local disease, the health being, in other respects remarkably good; while in others, there is such evidence of disturbance in the functions of dis-

tant parts, as to justify a reasonable suspicion of their connexion.

In considering the treatment of varix, when accompanied by ulcers, experience will have taught the practitioner to regard the age of the patient, the state of the organs important to life, and other circumstances of the constitution at the time, before he decides on the propriety of even attempting a cure.

In advanced age the resources of the constitution are limited; its actions are confined to a few ordinary efforts, and its power of accommodating itself to circumstances is already nearly gone. It must not be disturbed in the performance of its functions, and the very diseases to which it is accustomed, are meddled with at the risk of life. The older physicians considered discharges of any kind, catarrhal, hæmorrhoidal, cutaneous, or that from ulcers, as constitutional, when they had continued for a certain length of time, and the general health had not appeared to suffer from their presence.

I have known many persons, with whom the least diminution of an habitual discharge was presently followed by feelings of impaired health, and occasionally by actual mischief. The following case may not be uninteresting, as exhibiting this alternation in a remarkable degree. It is given in a condensed form, from notes made during the attendance.

Lady R——, at the age of 79, had bronchitis in 1829, and and was so ill that her recovery was despaired of. She had cold extremities, intermitting pulse, great dyspnœa, and difficulty of expectoration. Wine given freely, and the appearance of an eruption on the legs, saved her for the time. The expectoration which then occurred became habitual, and the eruption, which was generally of a pustular character, continued till the period of her death in 1831.

On one or two occasions the discharge from her legs diminished, and then the cough became hard and the breathing fre-

quent and oppressed; but when the discharge from the limbs re-appeared, the bronchial affection subsided to its ordinary state. She was seized at length in 1831 by the catarrhal influenza prevalent at the time. It began with rigors and such a degree of collapse as nearly annihilated her. The legs literally "dried up" at once, the discharge ceased, and they became cold and livid. The usual symptoms of the influenza set in with great violence. Under the most persevering attentions of her friends the heat of the limbs was restored, and the stage of mucous secretion in the bronchial membrane was attained; but she sank, literally from inability to expectorate.

I have at this moment under observation an elderly gentleman, who has succeeded, for the second time in twelve months, in nearly healing two ulcers, one on each inner ankle, connected with a varicose enlargement of the veins of long standing, and he is already beginning to complain of suffocation on going up stairs, annoying cough, and occasional vertigo, during which he is frequently blind for two or three seconds.

In whatever way we explain the connexion, it is matter of observation that those habitual discharges become included in the arrangements of the system, and in some measure a part of its economy.

I have had occasion to observe, that the habitual congestion of varix, more especially if accompanied by œdema, is often co-existent with a state of the thoracic organs, very susceptible of disturbance from any change in the condition of the disease. In such cases there is some degree of dyspnœa and disposition to cough on exertion. Slight exposure to cold produces the symptoms of catarrh, which, in winter, is generally troublesome, and takes the usual course; but in finer weather may go off in a few days, without any, or, at most, with very trifling expectoration.

What is very important to observe, however, is, an irregularity of the pulse occasionally found in connexion with these

symptoms, and the striking similarity in the history of the commencement of the complaint.

Some will call the disease with which they had been affected, erysipelas, or attribute it to accident; others will call it rheumatism: but they will generally agree in this, that they were at one period confined with inflammation and swelling of one or both legs, accompanied by more or less of fever; that the swelling persisted after the fever was removed; and that on resuming the erect posture, the superficial veins progressively increased in size.

The following is a remarkable instance of this description, and the subject of it a very intelligent observer of his own case.

Mr. ——, an eminent solicitor, was attacked in ——, 1826, after exposure to rain, by acute pain in one hip. He instantly ordered a hip bath, and while seated in it, the pain quitted its first position, and attacked the knee and leg. The next day both limbs were enormously swollen; in a day or two this was followed by high fever and delirium, and an erysipelatous inflammation had engaged the integuments. From this state he slowly recovered, and then, first, perceived the veins of both legs enlarged.

Their present condition is as follows: The integuments in front of the tibia, and over the instep and heel, are a deep brown colour, with purple discolorations intermingled; both are permanent on pressure; a furfuraceous covering is observable behind both inner ankles, giving an unsound feel and appearance to the skin. The branches of the saphena are varicose, and run in grooves formed by the general œdema of the legs; across the spine of each tibia there is one large projecting vessel. About the inside of the calf of the left leg, there is a coil of the veins more prominent than the rest.

He is fat and strong; his pulse about 84, with an intermission at irregular intervals; there is no *bruit* perceptible at the

heart; both sound and impulse are moderate. He is subject to oppression at the chest, and is occasionally affected with catarrh. About two months ago, just after breakfast, he was seized, while speaking to a client, with complete loss of recollection, retaining, however, some consciousness of his situation; this state lasted about twenty minutes. He took an absorbent lozenge, and was in a few minutes quite restored. He attributed the attack to having eaten calf's head at dinner the day before.

The following case, though differing in some respects, has a general resemblance to the former. It is extracted from the case-book of the hospital.

Michael Carberry, a carpenter, ætat. 64, registered as an extern patient June 27, 1832. He has an ulcer of an irregular figure, with white raised edges, just above the outer ankle on each leg. The integuments are deep brown. A constant discharge of watery fluid is oozing from the skin about the ankles and instep. The branches of the saphena are varicose at both sides. On the left a large cluster is visible on the dorsum of the foot, another on the calf of the leg, and the trunk of the vein is enlarged and projecting as high as the point below the groin, where it naturally disappears. He has a large scrotal hernia at this side. On both sides of the abdomen the epigastric veins are large and tortuous.

About three years ago some bricks fell on his legs; they swelled "till they were larger than his thighs;" this was soon followed by ulcers. A year and a half since the ulcers healed, when his breathing became oppressed, and he had severe cough. This state continued for about four months, when the ulcers "broke out again within a day of each other, and his cough got better at once." At present his breathing is short on going up stairs; there is some *rale sonore* through the bronchial tubes. His pulse is about 82, very unequal in point of force, and intermitting every three or four beats. I could not discover any evidence of disease about the heart. The same result was ob-

tained by Dr. Corrigan, who examined him with a good deal of care.

As I have not yet had an opportunity of ascertaining the structural alterations which belong to the foregoing history and external signs, I shall content myself with simply stating what I have observed. It may not be improper to allude here to the somewhat analogous cases contained in a very interesting paper read by Sir Henry Halford at the April meeting of the London College of Physicians.

The first is that of "the late Earl of Liverpool,* who laboured for years under swelling of the left leg and thigh, with a varicose state of the veins from the ankle to the groin. The extraordinary state of his pulse was what attracted Sir Henry's notice. It used to beat but forty-four pulsations in a minute, a circumstance which induced Sir Astley Cooper ingeniously to surmise that the external iliac vein of the side affected was obliterated. And this proved to be precisely the fact upon examination of his lordship's body after death. The left external iliac vein was impervious for several inches, and what is more, the corresponding vein of the opposite side was the seat of ossification. Sir Henry Halford thought it not improbable that the apoplectic seizure which Lord Liverpool suffered a year before his death was owing to the obstruction thus produced. About four ounces of serous fluid was found effused into an unnatural cavity in the head. His speech had failed him almost entirely after the attack. Epileptic fits at intervals supervened, and it was in one of these that he expired.

"Another case related by Sir Henry Halford occurred in the person of an "officer of high military reputation." The patient had been ill of an inflammatory affection of the chest, which was in course of treatment when he began to complain of acute pain about the liver. This again was followed by a new com-

* Medical Gazette, May 5th, 1832.

plaint—a deep-seated pain in the left groin. Sixteen leeches were applied, but on the following day the leg and thigh were considerably swollen; some knots were felt in the course of the veins, and the lymphatics were manifested by red streaks. Leeches were applied three several times; but though the anguish was allayed, the limb has ever since continued somewhat swollen.* The only thing Sir Henry regards as serious in this officer's case is a notable intermission of the pulse, which he cannot help looking on with suspicion. Sir Henry concludes by suggesting whether it would not be worth the labour on the part of practitioners to trace the connexion (if there were any) between the irregular intermitting pulse of declining life, and some past unheeded inflammation of an important vein occasioning an obliteration of its channel†."

The connexion between the pulmonary and general venous systems is too obvious, even in health, to escape observation in practice. The respiration is scarcely interrupted when the veins of the neck begin to be distended with blood; and this effect is felt, more or less, in that system of vessels all over the body. During operations, when hæmorrhage from the veins is obstinate, M. Dupuytren desires the patient to perform two or three full respirations, when the bleeding ceases at once. M. Sabatier thus speaks on this important point in operative surgery:—

"C'est dans les malades eux-mêmes qu'il faut rechercher la cause des hémorragies veineuses; l'ecoulement du sang noir, depend beaucoup plûs des efforts qu'ils font, que du volume des veines divisées. Les sujets suspendent en effet, pendant l'operation, les mouvements respiratoires; ils se roidissent con-

* Those who are desirous to trace the connexion between swellings of the limbs and venous inflammations will read with advantage the interesting report of Drs. Graves and Stokes in the 5th volume of the Dublin Hospital Reports.

† Medical Gazette, May 5, 1832.

tre la douleur; le sang ne pouvant traverser le poumon s'arrête dans les veines caves; il distend ces vaisseaux ainsi que ceux qui s'y dégorgent, et ne trouve bientôt plus pour s'échapper que les veines ouvertes. Il serait peu convenable de procéder à la ligature de celles-ci, car a mesure qu'on en lie, le sang se fait jour par un plus grand nombre d'autres moins considerables. Le moyen le plus rationnel, et celui que réussit le plus sûrement consiste a faire respirer le malade a fin de rétablir la circulation veineuse. A peine les poumons se sont-ils dilatés une ou deux fois que l'hémorragie s'arrête, prête à se renouveller avec violence si le malade recommence ses efforts."*

In order to avoid plethora of the pulmonary system, I have been accustomed to direct some mild cooling aperient previous to and during the application of bandages to the affected limb, enjoining at the same time a moderate system of diet, and lessening the quantity of animal food. In persons not actually labouring under severe thoracic affections, this precaution has been found sufficient to secure them against any constitutional disturbance as a consequence of throwing into the circulation a quantity of blood equal to the previous contents of the varicose swellings, or of the reduction of the œdema of the limb. After some time, when the constitution is otherwise sound, a balance appears to be established, and the diminished volume of the lower extremities occasions no embarrassment of the ordinary functions of life.

Pregnancy is another state in which even the simplest mode of treating the disease should be adopted with a considerable degree of caution.

The occurrence of varix during pregnancy is not confined to the poorer classes, although comparatively less frequent amongst those whose circumstances permit them to enjoy a tolerable share of rest. Females endure the inconvenience of varicose

* Sabatier, Med. Operatoire, tom. i. p. 80.

swellings with patience, because they expect to be relieved at the period of confinement. When the pain is so urgent as to render them feverish, a moderate bleeding from the arm is generally sufficient to procure relief. A roller then applied very gently, enables them to bear the erect position and exercise as much as is conducive to the general health.

Tight bandaging, however, is always unsafe. M. Chaussier relates the case of a cook who became pregnant on two or three occasions. Each time she was informed of her condition towards the second month by a varicose state of the veins of her legs. She compressed the veins by a bandage, and on each occasion abortion quickly followed.* I have not, myself, witnessed any such consequence as that related by M. Chaussier, but I know a lady who is obliged to lie on a sofa during pregnancy on account of varicose swellings of the veins. She has been very prudently prohibited the use of a bandage by her accoucheur, because it is invariably followed by hypogastric pains and a sense of oppression, for which she was obliged on one occasion to lose blood from the arm.

The local treatment of varix has for its object, either simply to lessen the pain endured in the part, whether ulcerated or not, and enable the patient to bear the erect position and employ the limb; or else to obliterate the distended vessels and direct the blood into collateral and deep-seated vessels in the course of the circulation.

The former or palliative mode generally consists in the well regulated support of a bandage applied as equally as possible from the instep to the knee. Various modes of bandaging have been devised, the laced stocking, the caoutchouc roller, the plaster and calico bandages, are those from which we may select.

Whoever will take the trouble of examining his patient a

* Archives générales, Fevrier, 1825.

few days after the application of the laced stocking, will find, that the motion of the ankle-joint has thrown it into wrinkles across the instep and heel, causing some degree of irritation of the skin; or else the patient has, in order to lessen the pain, permitted the apparatus to become slackened at that part, and the swelling has consequently returned. Indeed, it is obvious, from the difference in the shape of the parts in the flexed and extended positions of the foot, that the same enclosure cannot adapt itself with precision to both. Much ingenuity has been exercised by artists in order to fit the parts exactly, and yet no apparatus is so often thrown aside. I know one gentleman who, after suffering a great deal, has succeeded in saving the skin of his foot from irritation, by lining the laced stocking about the ankle and instep with French cotton wadding, which is renewed from time to time when the pressure has rendered it hard.

The caoutchouc bandage appears to be too yielding to afford any very efficient support; and if drawn so tightly as to overcome its yielding property, it becomes too narrow, and it sits less comfortably than a common roller. The flannel or calico bandage requires to be re-applied every day; and to prevent displacement, it is necessary to have the folds stitched to each other at different points along the leg. After all there is an inequality of support, which defeats the object of the application.

Having tried them all, the bandage I employ with most confidence is that composed of straps of soap plaster about an inch and half broad, applied with a very moderate pressure in the manner advised by Mr. Baynton for the indolent ulcer. I have seen more relief afforded from the pain, heat, and distension, by this mode, than by any other included in the palliative treatment. When ulcers are present, the management is nearly the same; the straps immediately covering the ulcers should be removed every day, the remainder perhaps once a-week.

The pressure of a bandage will frequently alter the irritable condition of the parts, and altogether remove the plain; but it

may happen that another action of an inflammatory nature may be set up, accompanied by tension, pain, and a considerable degree of fever. Mr. Travers treated a case of varix of the saphena by straps of adhesive plaster; the pressure succeeded in obliterating the vein, but the symptoms ran high, and required leeches, fomentations, and "active antiphlogistic treatment" for their removal. A similar train of symptoms occurred in a case of spontaneous obliteration of varix of the saphena and spermatic veins.*

The treatment of varicose ulcers should be conducted with the same regard to the possibility of irritation. The adhesive straps will often diminish their morbid sensibility in an astonishing degree. Stimulating applications are always dangerous, and may rouse them into inflammation, which is readily transmitted to the venous tubes with which they are connected.

An elderly man was admitted into the Richmond Hospital in the month of April, 1820, under the care of the late Mr. Todd, on account of a varicose ulcer just below the inner ankle. Before he was seen by this gentleman, a junior dresser sprinkled the sore with red precipitate, and over this applied a compress and bandage. The man passed a restless night. The integuments round the ulcer were painful and inflamed next morning, and he complained of tenderness up the limb. Rigors, low fever, with brown tongue, followed in succession, and he died after a lapse of eleven days. On examination, the saphena and iliac veins presented the usual appearance of phlebitis terminating in suppuration.

The hæmorrhage from varicose veins, though always alarming, is rarely attended by a fatal result. The blood issues with considerable force, the loss is therefore sudden, and early syncope generally arrests the discharge. Where the constitution has been previously weakened by ill health from any cause, or in persons of originally delicate frame, such an accident is

* Cooper and Traver's Essays, vol. i.

always formidable. In fact, death has more than once occurred in consequence of the hæmorrhage from varicose veins.

Bleeding may take place from some point in a varicose ulcer in consequence of increased action in the parts, and the ulceration engaging a neighbouring vein. I have also seen it happen from the fistulous orifice before described, when the scab had been, by some accident, removed. This is the most frequent form of hemorrhage in pregnant women.

In March last, I was requested to see a lady who was literally blanched from the loss of blood, which issued from a varicose vein. She was a large, fat woman, in the sixth month of pregnancy; she had been standing for more than an hour at an auction, and suffered considerably from the heat and distension of the limb. On coming home she was tempted, by the itching, to rub the part with her nails, in doing which she removed a small crust covering a prominent point of the swelling. After many ineffectual attempts to arrest the jet of blood by binding a handkerchief about the leg, she sent for aid. When I arrived, I found the limb had been firmly bandaged, and the bleeding had been suppressed; but she suffered such severe pain that she insisted on its being examined again, although she dreaded the flow of blood. On removing the bandage and compress the blood issued again in a very small stream, but with considerable force. I placed the limb in a position with the heel higher than the knee, and kept the point of my finger upon the orifice, leaving the remainder of the leg exposed to the air. After a minute or two, the finger was gently removed, and a minute dossil of lint was laid on the point, supported by a light compress, and a roller applied, with a very gentle degree of pressure. She had no more trouble from the accident, except that she adopted the recumbent position during the remaining three months before her confinement.

The hemorrhage from wounds may be troublesome, either immediately, or after a period of eight or ten days from the occurrence of the accident, if the parts are kept in a state of irri-

tation, when the slough is coming away. One of the most troublesome cases of venous hemorrhage I ever saw, was of the latter description. The indication in such cases is to lessen the volume of blood in the limb by a suitable position; to promote the formation of a clot by a minute dossil of lint, applied to the point from which the blood has escaped; and if a clot has been already formed, to adopt means likely to remove every source of irritation by which it might be disturbed. The application of any very firm degree of pressure has appeared to defeat the object, in most cases of venous, as well as arterial hemorrhage.

The frequent recurrence of bleeding from a particular cluster of veins; or such a degree of pain as would render the limb nearly useless, while the bandage might be forbidden by the extreme irritability of the parts, have induced surgeons to look for other, and more decisive modes, of removing the disease.

Amongst these, the actual cautery, although formerly recommended by Celsus, is now only practised by the native practitioners in India. The potential cautery, as it is called, has been even recently advocated by Mr. Mayo, who applies the potassa fusa, made into a paste with soap: it has not, I believe, been employed in this country. Indeed it is not a very prepossessing mode of treatment: an ulcer is opened by an eschar, with the design of exciting adhesive inflammation about the veins, but with the chance, from the uncertain nature of the application, of the inflammation becoming diffused along the course of the vessels themselves.

With a view to avoid an extensive operation, which, like excision of the cluster, occasioned a large and painful wound, Sir Everard Home conceived the plan of tying the trunk of the saphena; but the result is, on the whole, unfavourable to its continuance. The saphena has been tied, and many patients recovered, but the fatal cases are already too numerous to admit of its repetition.

The success of the ligature, applied to an artery, should

never have suggested a similar operation on a venous trunk. There is no analogy between the prospects in the two cases. In the one, the lining membrane is fairly cut, and the injured parts are unloaded, as in a common wound: in the other, the inner coat is strangled and contused, without the possibility of the congestion being relieved by an effusion from the part itself.

M. Delpech has lately tried a new mode of obliterating the spermatic veins in a state of varix: the vessels are insulated by a strip of amadou, which is retained without any ligature for three or four days, till the adhesive inflammation is established. It appears to have succeeded in the spermatic veins, but, I believe, has not yet been tried on the saphena. In one case the amadou became buried in the wound, and alarming peritonitis ensued.*

Other operations on the trunk of the saphena have had their trial: it has been simply divided; a portion of its length has been excised; and again, two ligatures have been applied, and the intervening portion cut across; but fatal phlebitis every now and then occurred. In fine, Sir Astley Cooper's valuable warnings, on this subject, must have paramount weight with every one who is not utterly insensible to the lessons of experience.

It would appear, then, that every mode by which the trunk of the saphena has been attempted to be obliterated, is liable to the disastrous consequences of phlebitis.

On this account Mr. Brodie devised and practised the operation of dividing the cluster of varicose veins, themselves, with the precaution of making the external wound small, and at some little distance from the vessels. He was led to try this plan, from the consideration, that he had not observed wounds of the leg to be followed, in any instance, by venous inflammation; although, from the frequency of varix in the subjects

* Memorial des Hôpitaux der Midi, No. 24. Dublin Journal, vol. i. p. 102.

of hospital treatment, it was more than probable that many of such accidents had occurred in persons afflicted with the complaint. He was further strengthened in his opinion of its safety, by the fact, that such a train of symptoms had not been observed to follow the operations on hemorrhoidal tumours, by ligature or excision. He punctures the integuments near the dilated cluster, and passes the instrument across the vessels, between them and the skin, with a flat surface opposed to each, till it reaches a point beyond them: the cutting edge is then turned towards the veins, which are divided quite through in the act of withdrawing the knife. When the wound is united the vessels are no longer discernible: the bulk of the limb is diminished, and if ulcers had existed, they are found in progress to being healed. The painful states of either cluster or ulcers have subsided, and with the aid of some days' rest, and adequate support of the parts by a bandage, the patient has regained the use of his limb.

After the test of some years' trial it is reasonable to inquire whether this operation has been ever followed by consequences of so serious a nature as have occasionally attended its predecessors. As far as I have heard or observed, no fatal issue has ever succeeded to its performance. There is one circumstance, however, which occasionally interrupts the favourable order of occurrences in the progress to cure; that is suppuration along the track of the wound. Mr. Brodie relates two or three instances where inflammation of the cellular membrane took place, producing pain and tenderness of the limb, and a slight degree of fever, and the healing being affected afterwards "by the more tedious process of suppuration and granulation."*

Mr. Carmichael, who has performed this operation more frequently, I believe, than any surgeon in this country, has published an interesting detail of cases treated according to

* Med. Chir. Transactions, vol. vii. p. 202.

Mr. Brodie's plan with success. In some of these, however, notwithstanding every precaution, suppuration occurred in the course of the wound.*

Although no more serious accident has, to my knowledge, ever followed this operation, I think the surgeon will find it impossible to divest his mind of some degree of anxiety about the result, when abscess occurs in the vicinity of parts predisposed to a dangerous form of inflammatory disease. Between the years 1824 and 1829, I had occasion to perform this operation four times. In three of these suppuration occurred; and this event was always accompanied by some degree of tenderness about the wound.

If the success of operations on the arteries is known to depend very much on avoiding any unnecessary disturbance of the cellular membrane about the vessel, the importance of this rule, as regards the veins, will not be diminished, when we consider that a greater proportion of that tissue enters into the structure of the latter class of vessels; that it has been traced into the composition of their lining membrane itself; and further, when we recollect the facility with which disease of the cellular tissue is propagated, in every direction, from a single point, when the constitution is inclined to diffusive inflammation.

Reflecting on the steps of the operation, it was easy to see that some degree of laceration of the cellular membrane was unavoidable in the act of turning the instrument, before the division of the vessels was commenced, and I remember having experienced some difficulty in passing the bistoury in front of the veins, and occasionally feeling it bend under the force necessary to make it reach the desired point.

Mr. Brodie's bistoury is two inches and a quarter long in the blade, curved, or as cutlers term it, sabre-shaped, the back diminishing in breadth as it approaches the point. Now,

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* Trans. College of Physicians, vol. ii.

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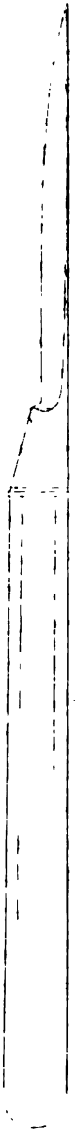

M. FURRALLE
Arch.

the length of the instrument, compared with its other dimensions, occasions an unsteadiness of movement, in consequence of the axis of the point not being in direct line with that of the remainder of the blade. A degree of force is therefore required, which threatens a sudden plunge through the integuments, and this is often only prevented by passing the fingers of the left hand along the skin, and guiding it in its course.

Suppose the point to have reached its destination, the blade is next to be turned, and here occurs the objection to its curved or sabre shape. If it be turned in such a manner that the portion of the blade near the handle shall lie fairly on the wound, the point will be found to protrude the integuments awkwardly, and in describing the segment of a circle, will necessarily break up a corresponding extent of the cellular tissue about the vein. If, on the other hand, the point be depressed, so as to prevent its protrusion, the lower end of the blade will be found to have stretched the integuments at the place where the knife was made to enter, and some degree of pain and contusion have been produced. I therefore had an instrument made of the size and shape exhibited in the annexed drawing; a little shorter than the other, the back straight, and having about a quarter of an inch of its length, near the point, made as thin as possible, without being a cutting edge. With this I found much less difficulty in passing across the veins, the force employed being conveyed in a direct line from the handle to the point; its passage being at the same time facilitated by the thinness of the back of the blade at its extremity.

In turning the cutting edge toward the veins, I found that the distension of the integuments and cellular tissue was equally divided along the track of the knife; since it described in turning a portion of a circle, the radius of which was merely as the breadth of its narrow blade. In withdrawing it through the wound, very little force indeed is required for the division of the veins; the elasticity of the skin being nearly sufficient

for that purpose. Whenever the fascia behind the vessels is heard to yield under the knife, it is quite obvious that more force has been employed than is consistent with the hope of avoiding the process of suppuration. In order that no greater degree of action should be set up than is necessary to a quiet union of the parts, I have been accustomed to confine the patient to bed the day previous to the operation, during which interval, some mild cooling medicine is directed, and a reduced diet substituted for his usual fare. The advantage of this preparation in the case of aneurism is also available here. The circulation is calmed, more particularly in the lower extremities, where it is most essential to promote repose.

Previous to the operation itself, the limb is surrounded by straps of soap-plaster, nearly as high as the situation of the cluster, and a roller is pressed in the same course ready to be continued up the limb, when the division is complete. The object of this step is to lessen the flow of blood through the tortuous vessels, and consequently their distension and irritation below the point of incision, when the current is interrupted. The outline of the cluster is sufficiently marked by the column descending from the vein above.

As the knife is withdrawn from the wound, it is followed by a gush of blood, which is projected with considerable force. Generally speaking, it is prudent to allow a moderate quantity to come away—measured, of course, by the strength and condition of the patient. The escape of this portion of blood is attended with the good effects of allowing the vessels to collapse or be compressed, and at the same time of lessening the plethora of the system, and the tendency to inflammatory action in the wound.

A compress, sufficiently large to cover the group of veins, is then laid on the part, and the roller, previously moistened with some evaporating lotion, is continued up the limb. When the foregoing precautions have been adopted, a much lighter degree of pressure is sufficient to maintain the contact of the

parts, and the pain usually suffered after the operation is lessened in a remarkable degree.

The patient is then laid quietly in bed, and the limb placed on a pillow with the heel higher than the knee. Some degree of faintness is usually experienced, but the horizontal posture is generally sufficient for its removal. Very little attention is now required beyond what would occur to any Surgeon of common prudence : the parts are kept cool and moist; the patient is not allowed to disturb them by assuming the erect position even for a moment; and as the diet is still light and moderate, medicine is scarcely required.

In general, it is prudent to change the compress on the second or third day. It is found, as after bleeding at the arm, coloured by the blood, and if the parts have not been kept sufficiently moist, stiff and unpleasant to the parts. In changing the dressing, great caution is necessary to avoid any disturbance of the wound.

Should the parts be, as I have always found them, united, it will be right to continue the adhesive straps as high as the ham, and then the bandage may be altogether removed. The limb will be thus kept much cooler and more comfortable to the patient, and the evaporating lotion may be still employed as before.

About the fifth day it is generally necessary to renew the straps of plaster, on account of the diminished bulk of the limb. Should we have to treat ulcers, it is only necessary to cut off a corresponding portion of the plaster every day, and replace it by a dressing of the same kind. A few days will generally suffice to heal an ulcer of moderate size.

Within the last two years I have performed this operation three times, and in none of these instances was matter formed, or did any inconvenience follow beyond the first smarting of the wound. Where distension has been prevented by the means already pointed out, and no more parts have been wounded

than was necessary to fulfil the indications of the plan, I think I may say, that the pain was of shorter duration than I had previously remarked.

I have not allowed the patient to leave his bed under a period of ten days at least, and this restriction is not complained of in cases that really require the operation. The adhesive straps are then renewed about once a week, supported on the outside by a very light thin roller; with this assistance the patients have been enabled to resume their accustomed habits, without any recurrence of the complaint from the same source.

With respect to the safety of this operation, I should say, that where the case admits of treatment at all—where nothing in the constitution or the state of other organs forbids our interference with this unequal distribution of the blood, and where the operation is conducted in the manner above described, I have no reason, from experience, to think, that any untoward consequences are likely to arise. With regard to the permanent advantages of the plan, I would not be understood to affirm, that it is capable of removing the disposition to varix, or prevent the swelling of veins in other parts of the limb, in persons otherwise disposed to the complaint. But if the indication be, to obliterate a particular cluster of veins, which happen to be the seat of pain, or tend to keep up a condition of ulcers unfavourable to the process of healing, I have found it, as Mr. Brodie asserts, a speedy and efficacious method of accomplishing our object.

ART. XVII.—*On the Application of the Actual Cautery in Vesico-Vaginal Fistula.* By EVORY KENNEDY, M.D., Licentiate of the King and Queen's College of Physicians in Ireland, Lecturer on Midwifery at the Richmond Hospital School, and late Assistant to the Dublin Lying-in Hospital.

OF all the diseases to which the female frame is liable, there is scarcely one productive of more distress and vexation to the patient, or which has been looked upon as a greater opprobrium to the profession, than the existence of a fistulous communication between the bladder and vagina. The constant escape of urine, which is the effect of this lesion, is not merely a source of considerable pain and suffering to the patient, from the scalding and abrasion of surface it produces; but is also attended with inconveniences, which are such as materially to interfere with her relations to society.

Those who have been in the habit of meeting with such cases in the lower ranks of life, whether in hospital, or at their own houses, where cleanliness is not so strictly attended to, can recognize them but too accurately by the disgusting urinous effluvia emitted from the patient, which so completely charges the surrounding atmosphere as to be strongly perceptible throughout the chamber. In the upper classes, patients suffering from this malady are sometimes, for obvious reasons, obliged to shut themselves up completely from society. If further considerations were necessary to draw our attention to the means of relieving this distressing complaint, we should have them in the facts: first, that it is by no means unfrequently produced by mismanagement during labour, the accoucheur either unnecessarily delaying the delivery of his patient, until the pressure produces destruction or sloughing of the parts, using instruments violently, or such as were inapplicable in the case, or rashly forcing the catheter through the urethra, or

neck of the bladder; and secondly, in these affections being considered by many, if not irremediable, at least to promise so little chance of cure, as to induce them to have recourse merely to palliative measures in its treatment. The worst case of this kind, however, I have met with, was produced by violence *in primo coitu*, in a young new married woman, the vagina and bladder formed one cavity; and so completely was the septum destroyed, as to preclude the possibility of relief by any operation.

Various plans have, at different times, been recommended with a view to the cure of this distressing complaint. By some, the introduction of a catheter into the bladder, and the detention of it there for some time, has been supposed sufficient for this purpose. Others have recommended that pressure should be made over the aperture, with a view to prevent the urine escaping through it, and to cause it to close; and a host of sufficiently ingenious contrivances have been invented to endeavour to produce this effect: of these, the elastic bottle, made to fit within the vagina, appears to answer best. Again, a combination of these plans of treatment has been recommended, and this constituted Desault's method, which was long adopted in the schools. Experience, however, has unfortunately proved that these plans, although serviceable in slight cases, and where had recourse to immediately after the occurrence of the accident, are quite unavailing in cases of long standing, or where the opening is considerable. More enterprising practitioners have attempted to produce a union of the edges of the aperture; and with this view, after paring them with a knife or scissors, have fastened them together by means of sutures. The difficulties in this operation are very considerable; whilst, to afford a likelihood of success, it is frequently necessary to repeat it again and again. Mr. Earle speaks of his performing the operation so often as thirty times in the same case, before success crowned his efforts. Now, although an occasional cure is

undoubtedly effected by the suture, yet the difficulties* and fatality attending it oppose such obstacles to the operation, that medical men are, in the great majority of cases, deterred from having recourse to it, deeming it preferable to resign the unhappy female to a life of wretchedness, and leave her an object of disgust, not merely to herself, but to all those about her, than to risk having recourse to a hazardous operation, with, at best, but a very questionable† chance of success. Caustics and stimulating ointments have been tried for the purpose of union of the fistulous edges; and with this view, nitrate of silver, potassa fusa, nitric acid, savine cerate, and even blistering ointment, have, in turn, been applied. The results attending their application have been quite as unsatisfactory; while the difficulty of confining their operation to the margins of the aperture, and the risk of their injuring the interior of the bladder, in a great measure preclude their use. Under such circumstances, many practitioners, looking upon these cases as hopeless, rest satisfied with palliative measures, merely recommending their patients to adopt some such plan as an oiled silk bag and sponge, so adapted as to collect and retain the urine on its escape.

The actual cautery as practised and recommended by Dupuytren,‡ appears to hold out a fair promise of relief without

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* Mr. Earle, in his lecture on the operation of suture in vesico-vaginal fistula, points out these difficulties in very strong and correct language; we shall here merely enumerate them. The narrow space for operation, continual flow of urine, which blunts the delicate instruments necessary, great sensibility of the parts engaged, their disposition to slip from before the instrument, the impression made on the pelvic viscera by a cough or sneeze, and great indisposition in the mucous surfaces to take an adhesive inflammation.—*See Medical Gazette for November* 14, 1829.

† Mr. Earle succeeded in curing only three cases in this way, although he speaks of so many as twenty-one patients afflicted with this disease having come under his notice.—*Ibid.*

‡ Journal Hebdom., No. 58.

risk, and even a likelihood of effectual cure in these distressing cases. As this line of practice has not, at least in this country, attracted the attention which it would seem to merit, I am induced, from having experienced its utility, to bring it under the notice of the profession; at first, it might appear that the difficulties attending the application of a red-hot iron within the vagina would be very considerable, and that it could not be accomplished without much suffering to the patient, and risk of injury to the internal parts; in forming this opinion, we would be in error, as it may with very little management be effected, and that with perfect safety. There being some omissions, and a want of attention to certain precautions, in the account which we find in the Journal Hebdomdaire of this operation, as practised by Dupuytren, I shall describe the manner in which I have usually performed it.

The instruments requisite are, a flat female catheter, two female sounds, a speculum, and cauterising iron. Where the aperture is very high up in the bladder, the speculum I prefer, is the large two-bladed pewter one used by the French; as Weiss's small three-bladed speculum, which answers in ordinary cases, when the lesion is more within our reach, does not, in the former, so well expose the part, or protect the vagina from the iron. Where the opening is in the neck of the bladder, or urethra, the operation may be quite as well performed by dilating and protecting the vagina with curved spatulæ. In an operation of this kind, in which I lately assisted Dr. M'Dowel, three broad brass spatulæ, one introduced towards the perineum, and one at each side of the vagina, exposed the lesion remarkably well: this plan has the advantage of not pushing up the bladder further into the vagina, an inconvenience which it is next to impossible to avoid with the speculum. The cautery should be as nearly as possible the shape of the opening in the bladder, but somewhat larger. That which we shall generally find to answer, is one of an oval shape, with its longer diameter placed transversely. As in the majority of cases, the longest measurement

of the aperture is from side to side, and in such the difficulty of affecting an union is greatest; in some cases, however, the aperture has its longest measurement from before backwards, and then our cautery must be similarly constructed. The margin of the cautery ought to be rather more raised than the centre, as our object is to touch the edges of the fistula without injuring the mucous membrane of the bladder.

In applying the cautery we should place the patient lying forwards upon a table, with her limbs hanging over the ends, which should be near a window; elevating the pelvis upon bolsters or blankets placed under it. The limbs should then be separated, and the light thrown as much as possible into the vagina. Where sufficient light cannot in this way be procured, a candle must be used. The speculum is to be introduced, and the lesion brought into view, a flat, female catheter must now be passed through the urethra, and placed across the opening within the bladder, taking care, at the same time, to reduce any protrusion of the vesical mucus membrane, and retain it out of the reach of the cautery. When the opening into the bladder is very considerable, or the catheter is insufficient, it may be necessary to pass a second instrument through the urethra to effect this object. I have found the introduction of two female sounds answer remarkably well, where a second instrument was necessary. As folds of the vaginal mucous membrane sometimes protrude between the blades of the speculum, the operator must guard against this, and examine whether the instrument be so adjusted as to prevent the vaginal passage being injured by the iron; taking care that the interior of the bladder is well protected, and the edges of the aperture completely within his reach. Having satisfied himself in these respects, he is carefully to introduce the cautery, heated to a white heat, and, having steadily touched the edges of the fistula, to withdraw it and introduce a pledget of lint dipped in cold water, after which he may gradually remove the speculum.

The cautery must only touch the part, for if retained too long in contact with it, might produce a sloughing eschar.

The operation is extremely simple, and performed in a minute; and although the name of the actual cautery sounds rather harshly, its application is, in my mind, by no means as severe, or attended with such suffering, as the suture. The patient should be put immediately to bed, and strict quiet enjoined. The after treatment necessary is merely to keep the bowels gently open, and pay attention to the abdomen, lest tenderness should set in; this I have but once known to occur after the cautery; and then it was relieved, immediately, by warm stuping and aperients. After the immediate irritation has subsided, it is necessary to introduce a gum elastic catheter into the urethra, and retain it in the bladder, to insure the urine's passing through it; a precaution the more called for, as in some cases of long standing, this passage has become so collapsed as to be almost impervious. However, in cases where the catheter, on being introduced, passes through the fistula into the vagina, it is better not to leave it in the bladder, else it will do more harm than good. In such it will be sufficient to pass it into the bladder once or twice a day, to endeavour to restore the urethra and bladder to their proper state, by bringing the urine in its natural direction. It is necessary that the patient should retain the recumbent posture, and remain perfectly quiet while under treatment; and this point cannot be too much insisted upon. We should also ascertain in what position, namely, whether lying on the back, on one or other side, or the abdomen, she can retain her urine for the greatest length of time, and cause her to remain in that position as much as possible. This has two recommendations; in the first place, it prevents the urine from constantly escaping out of the fistulous aperture, which interferes with the union of its margins, and progress towards a cure; and in the second, by retaining the urine as long as possible, the bladder, which from being continually empty, had become contracted, is, by this means, gradually distended, and

rendered more capable of fulfilling its office of reservoir. By attending in this way to position, and the situation of the fistula, the bladder will be induced to contain a considerable quantity of water, in which it is assisted by the transverse distension observed in it as the effect of pregnancy. It is very desirable, however, with a view to recovery, that the urine should be induced to pass through the urethra, and not by the fistula; and, if the plan here recommended interfere with this, it is better to let the patient assume the position in which the urine escapes through the urethra, if it does so more in one than another.

The effect of the cautery is to produce a thickening of the margins, and consequent contraction and diminution of the aperture, and ultimately an adhesion of its edges, closing it up altogether. Upon the size and position of the aperture will depend the greater or less likelihood of perfect cure.

The operation may require to be several times repeated. Whether by persisting in repeating it sufficiently often, we should, even in the majority of cases, succeed in closing the aperture, I cannot say—but rather think not. Fortunately, however, it does not require that the aperture should be actually closed to enable our patients to retain their urine, as a very good substitute for the adhesion of the sides of the fistula occurs in the extension of its margin or lip across the aperture, thus forming a kind of valvular closure of it, by which means the bladder becomes capable of retaining the urine almost as well as if the opening were closed. In a patient whom Dr. Breen saw with me, this effect was produced in a striking degree; and although her urine was constantly escaping from her before the cautery was had recourse to, she was enabled afterwards to retain it without difficulty for six or seven hours. In a case which Dr. Collins saw with me, although the operation was performed six times, yet the aperture did not completely close; but the thickening of the margin of the fistula took place, in consequence of which the woman was able to retain her urine throughout the entire night, and for several

hours (even when walking and using active exertion) during the day, although on her coming to me it was constantly escaping.

With these proofs, then, of the utility of this plan of treatment, I can have no hesitation in recommending its adoption to those whose opportunities afford them the power of putting it to the test, trusting, that further experience may add to greater facility in its performance and perfect freedom from danger, the two advantages which it undoubtedly possesses over the needle—that most important advantage of all, a greater certainty of cure.*

ART. XVIII.—*A Case of diffused Lumbar Abscess, under the Influence of the Gouty Diathesis.* By CHARLES LENDRICK, M.D., T.C.D., Fellow of the College of Physicians, and Physician to Mercer's Hospital, Dublin.

MR. ——, aged about 39 years, married, and the father of a family, having previously enjoyed excellent health, with the exception of a few attacks of hereditary gout, was seized about the end of April last with slight symptoms of cholera, which subsided under the usual treatment, but were followed by a paroxysm of gout in the feet. The redness and swelling almost entirely ceased at the end of a few days, but were succeeded by considerable pain in the back and loins (not an unfrequent attendant on gout); he also complained of pain shooting through the right spermatic chord, and affecting the testicle. Temporary relief was procured by the use of a suspensory bandage, and an attempt was made to procure a recurrence of the gouty inflam-

* Some further remarks upon this subject were transmitted to us by Dr. Kennedy, which being too late for this sheet, we are obliged to place in the Appendix to this Number, which see.—EDIT.

mation in the feet by means of a mustard pediluvia. In consultation with Mr. Colles, it was agreed to administer small doses of subcarbonate of soda with extract of gentian, and to procure a free state of the bowels by the occasional use of the tinct. seminum colchici in an aperient draught. On external examination no change of appearance was observable, except a slight fulness in the right groin occupying the region of the spermatic chord.

From this period (the second week in May) little perceptible alteration took place for a considerable time. He complained still of severe but by no means constant pain in the back and loins, which, during the paroxysms, extended to the right hip and knee. He was able to move the limb, but not to derive assistance from it in walking from one part of his chamber to another. Rest was procurable at night only by the assistance of opiates. His appetite, however, was pretty good, and although he had lost flesh and become emaciated, there was as yet but few decidedly hectic symptoms. The pulse was in general about 90, with occasionally a rigor or perspiration at remote and irregular periods.

About the end of May he requested my attention to a swelling which he said had appeared in his groin. He conceived that it was likely to suppurate, and from what he had heard he augured favourably of his case from this circumstance. On examination I found a tumour, not in the situation of the chord, but just below Poupart's ligament. It was of an oval or rather pyriform shape, the long axis being nearly parallel to Poupart's ligament, but directed somewhat more downwards and inwards; the length was between three and four inches, and the main breadth about one inch. On desiring him to cough, the fluctuation previously distinct received a perceptible impulse. He now mentions that the swelling had appeared after sneezing, when he felt something give way.

The fluctuation in the tumour was observable even to the sight on making pressure on the abdomen; and an alternate

impulse was felt by each hand when placed on these parts. On examination in the erect posture, the impulse on coughing was still easier (if possible) to be detected. The right buttock presented a sacculated appearance, and the extension of the fluctuation here was but too evident.

I lost no time in representing to his family the formidable nature of the disease. He was again visited by Mr. Colles; Messrs. Crampton and Wilmot were subsequently called into consultation, and Dr. Charles Orpen was in constant attendance with me during the future progress of the case.

Our patient derived some advantage apparently, as far as his general health was concerned, by a removal to the country a few miles from town. His appetite became better, and rest at night was procurable by means of less doses of opium. He afterwards began, however, to suffer from perspirations, especially towards evening, and with increased emaciation his local sufferings became increased to an agonizing degree. He could bear the limb in the semiflexed position only, and in this it was retained by the hand of an attendant, as when left to itself it became violently and painfully convulsed. He was now entirely confined to bed, and acetate of morphine was exhibited in doses of three grains, before rest, or rather a cessation of the paroxysms, could be procured. Stripping, and subsequently sloughing, commenced over the sacrum and coccyx, and this was truly deplorable, as the supine position was the only one that afforded any respite to his other sufferings.

His appetite now declined, rest was scarcely procurable, and emaciation, with other hectic symptoms, were progressive. A change of posture became indispensable, in order to prevent the extension of mortification in the sloughing parts. I may here observe, that the experience of this and other cases has convinced me of the utter inutility of air-cushions, and similar contrivances, for removing pressure from ulcerated parts. The medical attendant cannot be too careful, by strict attention to cleanliness, and the application of camphorated spirit or tinc-

ture of myrrh, with the use of powdered starch, and above all, change of posture, if practicable, to prevent the occurrence of so great a calamity whilst the skin is yet unbroken. After this has once taken place, I really think the plane hard hospital bed is superior to all the contrivances of the various kinds of cushions, which, however carefully constructed, invariably shift their position, and act at length on the diseased surface, sparing one part only to make increased pressure on another.

One plan, however, we have adopted with great success in Mercer's Hospital. It consists in cutting out of a sheet of sticking-plaster a portion adapted to the size of the injured part; the surface of the surrounding plaster having been covered with cotton wading, a similar piece of plaster spread on both sides is placed over it. Thus a cushion is formed, which, on account of the double spreading of one plaster, admits of close application to the skin surrounding the ulcerated parts, which are thus comparatively at least saved from the effects of pressure. I may add, that the governors of the hospital, with their accustomed attention to the wants of the afflicted, have ordered two hydrostatic beds to be constructed on the plan recommended by Mr. Arnott; and most sincerely do I hope, that the contrivance may, as it seems probable, realize his expectation, and remove this opprobrium of the healing art. An excellent plan of raising the patient from the bed for the purpose of dressing, &c. was adopted on the present occasion on the recommendation of Mr. Crampton, but as it is, I believe, his intention to publish a description of it, any further observations of mine would be superfluous.

Under the painful circumstances in which we are placed in Mr. ——'s case, we had no alternative but to make an opening for the purpose of discharging the contents of the tumour, which, by its increased distention, had aggravated the patient's sufferings to such a degree, that their speedy termination by death was obviously an inevitable result. On the 23rd June Mr. Colles plunged a lancet into the swel-

ling, and enlarged the opening with a bistoury; this was on a subsequent occasion extended upwards and outwards to within an inch of Poupart's ligament, leaving an orifice in the superior part of the tumour of about two inches in length. The matter discharged was not in any respect similar to that of psoas abscess; it was ichorous and intolerably fetid, and of a liver colour. From its nature, there might have been reason to suspect disease of a bone; but the appearance was afterwards considerably changed; it became nearly puriform, thick, and yellow, with a slightly greenish tinge, and scarcely any odour. On opening the tumour nearly a quart was discharged, and all the symptoms were alleviated. It soon, however, became too plain that the relief was only temporary. It was found impracticable to extend the leg, which was agitated by severe convulsions; and all the symptoms that had existed previously to the operation recurred in even an aggravated degree. A violent and incessant hiccup at this time was a source of much painful anxiety, as all the usual antispasmodic medicines, musk, ether, &c., with ice, lemon juice, vinegar, and the mineral acids, totally failed in producing any influence. It at last subsided spontaneously, and except in a minor degree, it did not recur.

His frame was now exhausted by the combined effects of spasm (which doses of even six grains of acetate of morphine were inadequate to check), the usual attendants on colliquative suppuration, and an extensive gangrene of the parts in the neighbourhood of the sacrum. About the second week in August his sufferings underwent some alleviation; the spasms became less frequent and severe, the discharge from the wound was diminished, and he was enabled to extend the limb. There could, however, be but little doubt that a metastasis of disease to more vital parts had taken place. He was affected with cough, copious expectoration, and pain in the right side. With the exception, however, of the mucous rattle, and a slight dulness of sound during percussion of the side affected, there was no dis-

ease appreciable by auscultation, respiration being perceptible throughout the entire thorax. His faculties remained perfectly clear; but from this time he rapidly declined, and after little further suffering expired on Saturday, 18th August, at 4 o'clock, A. M.—The body was not examined.

This disease was obviously a diffused abscess, having its origin within the pelvis. The fatal result was only anticipated; the more certainly because the want of the adhesive process so as to establish a defined sac, was a plain proof of the deficiency of those vital powers from which our very slender hopes are ever derivable in such cases. It was questionable, however, whether the source of the abscess was to be traced in the course of the psoas muscle. The parts beneath the iliac fascia, or the neighbourhood of that muscle, presented a more probable origin. Deep pressure above Poupart's ligament near the anterior spine of the ilium and continued downwards and inwards, invariably produced a considerable discharge of matter. A probe introduced here passed much more superficially than the direction of the source of the matter, as it could be plainly felt through the integuments of the abdomen, and seemed to lie even in part of Poupart's ligament. From the emaciation of the patient, it was difficult to conjecture what extent of parts intervened anteriorly between the probe and the finger.

A considerable tumefaction, but of various amount, was always discernible by *deep* pressure above the ligament, in the part corresponding to the separation of the iliac and psoas muscles. Besides this, on one occasion there was another swelling obviously much more superficial and anterior in situation; this was elastic to the feel, very much resembling a hernia, which I once witnessed after the operation of tying the iliac artery. The elastic feel was succeeded by such a distinct fluctuation, that the propriety of making an incision here became the subject of consideration, but an increase of the usual discharge from the wound was followed by its disappear-

ance. The more deep-seated tumour was, however, still to be felt in the form of a hardened margin surrounding a cup-like cavity.

The region of the glutæi muscles, the perineum, the neighbourhood of the rectum, and the posterior part of the thigh, at various times presented appearances of fluctuation which afterwards subsided. Doubtless, some may have originated in the serous effusion attendant on deep-seated inflammation, and were independent of purulent deposit.

The matter was, as I have already mentioned, after the first discharge, in general, of a thick consistence, and of a greenish-yellow colour, with but little odour; occasionally, however, it was of the former liver colour, and ichorous. On one occasion it became so dark-coloured and fetid, that from the circumstance of a similar appearance in the alvine evacuation, it was conjectured that the abscess had perforated the intestinal tube; it is probable, however, that this was not the case, as the discharge afterwards resumed its usual appearance.

The neighbourhood of the origins of considerable nerves to the part so extensively affected with suppurative inflammation, sufficiently accounts, in my judgment, for the violence of the pain and the spasmodic agony attendant on the paroxysms.

But what was the *cause* of disease in this case?—Was the influence of gout the principal or the accessary? The symptoms which ushered in the formation of matter *first* occurred immediately on the subsidence of a paroxysm of regular gout in the foot, to which the patient had for some years been subject. I am aware that gouty inflammation sometimes terminates in suppuration in broken constitutions; of this I witnessed a fatal case in Mercer's Hospital; but Mr. —— was a man of robust make and temperate habits; he indulged freely in field sports, and before the slight bowel attack, to which I have alluded, was in the possession of actually rude health. I remember that he took considerable foot exercise on the 24th of

April, at that time I never saw a man who, to appearance, was more likely to enjoy continued good health and immunity from every disease, except that to which he was habitually subject. He did not at any time before the period of the gouty paroxysms complain of weariness, pain in the back, or the usual precursors of lumbar abscess.

ART. XIX.—*Letter from Mr. Ingleby to the Editor of the Dublin Journal of Medical and Chemical Science.*

Birmingham, 7th Sept. 1832.

SIR,

In reference to your review of my work on Uterine Hæmorrhage, I must for a moment beg your kind attention. You refer to my directions to leave the placenta in the uterus for four *days*. That this word, *days*, was misprinted for *hours*, is most evident from the context; moreover, the proposition is so monstrous that I can scarcely be suspected of intending it by any person. I did not notice the error until about five or six weeks ago, and as upwards of half of the edition, nearly two-thirds indeed, was then sold off, I found it was too late to cancel the sheet and reprint it. I instantly altered the word in my own text book. Having the interests of science pre-eminently before you in your several reviews, I am fully persuaded you will not deny me the justice of inserting this explanation, either in my own words or your own, in the next number of your ably conducted Journal.

I am, Sir,

Your obedient and obliged Servant,

JNO. T. INGLEBY.

BIBLIOGRAPHIC NOTICES.

Versuch einer Würdigung des Pulses. Von Dr. Joh. Ludw Formey. *An Attempt at an Estimation of the Pulse.* By Dr. J. L. Formey.

(Continued from preceding Number, p. 102.)

In our last number we left off as we were about to enter on Dr. Formey's remarks on the state of the pulse in relation to fever; accordingly, we shall now proceed with this interesting part of the subject. Dr. F. justly observes, that, though almost all pathologists describe the pulse of fever as quick and frequent, yet there are fevers in which it falls below the usual standard in both these respects. Selle was so well aware of this, that he defined fever as follows: "*Morbus cum frigore, æstu et pulsu naturali nunc frequentiori, nunc tardiori, vario gradu atque tempore stipatus.*"—(Rudimenta Pyretologiæ methodicæ.) Epidemic fevers, too, have been described by De Haen, Werlhoff, Sarcone, and Burserius, in which the pulse was not more frequent than usual. Besides, several circumstances have been already mentioned, which, of themselves, influence the pulse in this and other respects; he therefore concludes, that it cannot afford a certain, much less an infallible sign of the presence of fever, though he allows that in most cases, when considered along with the rest of the symptoms, it is a guide of great importance during the progress of feverish diseases. He considers that a pulse may be termed frequent, when it beats from 15 to 20 times oftener in a minute than it generally does.

"This is a sign that the heart is excited. As long as the irritability of that organ deviates but little, or not at all, from the natural state, there is generally no fever present; but when it is excited to unusually frequent contraction, on the one hand, or, on the other, when its irritability and contractility are so much diminished for any continuance, that its pulsations occur much less frequently than usual, we have reason to fear fever, with over excitement of the heart in the one case, and, with approaching paralysis of that organ in the other. In an adult affected with fever, a pulse of 120 in a minute is not to be considered as indicative of great danger, but when it exceeds that, and rises to 130, 140, or 160, the danger

increases in proportion; if it falls considerably during the remission, the danger is less than when it continues frequent, or rises. Some have asserted that they have felt it beat 240 in a minute; it is possible that the number of pulsations might amount to that, but they could not then be counted. I have never succeeded in distinctly counting above 180; beyond this I could only feel a trembling motion in the artery."

It is remarkable that Heberden fixes the same limit as our author to the number of pulsations that can be counted in a minute.

"An unfrequent pulse is such as beats from 10 to 15 times less than ordinary in the minute; this is a much more unusual state than the former, and is generally more dangerous. Many instances have been recorded of pulses that were naturally unfrequent; it is not such that are now under consideration. But when in feverish diseases the pulse falls below 50, the heart is in an incipient state of paralysis, and consequently life in great danger."

The quickness of the pulse, that is, the rapidity of each individual beat, is not so easily estimated. It may occur in an unfrequent as well as in a frequent pulse, and indicates a peculiar state of irritation of the ventricle, in consequence of which its contractions are performed with unnatural rapidity.

We wish our readers to pay particular attention to these remarks, because we have sometimes met with medical men who did not seem to be aware that there was any difference between quickness and frequency. It by no means follows, that because a pulse is quick it must be frequent; on the contrary, we have often observed a pulse to beat remarkably quick, with respect to each individual beat, while it was, at the same time, what is commonly, but wrongly, termed slow; that is, the number of its pulsations in a given time was below the usual standard. Neither should any one imagine that the distinction is far-fetched or useless; before he is at liberty to call it so, he must prove that it is of no importance to mark the distinction between that state of the system in which the contractions of the heart are performed, as it were suddenly, and that in which each occupies more than its due time. Though, as we have seen, the quickness of the pulse does not imply its frequency, yet the latter does the former, as, if a great many pulsations occur in a minute, each must occupy but a very short time: in like manner, slowness of the pulse implies want of frequency, as each beat must occupy too much time to allow many (comparatively speaking) to take place in the minute. Hence it is not, practically, such a mistake to call a frequent pulse quick, or a slow, unfrequent, as it is to call a quick pulse frequent, or an unfrequent pulse slow.

Doctor F. next considers the pulse as affected by inflammation, and enumerates the various appearances assumed, and effects produced by the latter, according to the tissue or the part affected; but as these are now well known, and to be found in many excellent English works, we shall not dwell upon them here. The conclusion he arrives at is, that "the pulse is of no small use as a guide in inflammation; but that it varies greatly according to circumstances, and especially according to the structure affected. Accordingly, it cannot be maintained, as formerly, that there is an inflammatory pulse, or that a hard, full, and frequent pulse is a characteristic of every kind of inflammation. On the contrary, the circumstances already mentioned must be carefully weighed in judging from the state of the pulse in inflammatory diseases.

The pulse, as affected by the nervous system and by sympathies, is the next topic. After some observations on the reciprocal influence of the nervous and circulatory systems, and on the effects of various medicines and poisons on each, this section concludes with the following remark:—

"It is evident of what importance it is to the practitioner to attend to those phenomena that depend, not on original morbid alterations in the system, but on the effect of the remedies employed. It is, therefore, absolutely requisite to the correctness of our diagnosis, that we should carefully distinguish between the symptoms that arise from the disease, and those that are produced by the treatment. When a physician is not called in till the former has made some progress, he must pay particular attention to this caution. The symptoms are altered, and the original type of the disease disturbed by the employment even of such medicines as are considered to have no great effect on the system. For my own part, I have made a fixed rule, in all cases where I cannot clearly distinguish the nature of the complaint, to intermit all treatment for some days; and it is not till then that its original type plainly appears. I cannot too strongly recommend this practice as a means of enabling us to form a right judgment in complicated or perplexing cases."

The variations produced in the pulse by the influence of respiration, food, digestion, temperature, and sleep, are next examined. A thorough acquaintance with these is absolutely necessary, to enable us to make due allowances in our estimation of the state of the pulse, and the conclusions to be drawn from it; but the consideration belongs more properly to the department of physiology than that of semeiology, for which reason we shall here content ourselves with transcribing two singular cases adduced in the remarks on sleep:—

"Under some circumstances sleep becomes greatly prolonged. After great corporeal exertions, or violent affections of the mind, men

have been known to sleep for 24, 48, and even up to 72 hours, without waking. There are diseases of the brain in which a constant and apparently natural drowsiness continues for a length of time. Madame J. used to sleep, almost every year, for several months in succession, awaking for a few minutes, about every second day, when she used to get food, and pass her urine and fæces. If she was not attended to at the moment of awaking, she used to go to sleep again, without eating or evacuating, and continue so till the next period of awaking arrived. Her pulse was slow and full: she died in this state, greatly emaciated, but in perfect possession of her senses during the momentary intervals of her being awake."

"Colonel K. used to sleep almost continually by day as much as by night. When he awoke, he used to take food and plenty of spirituous liquors, and then go asleep again immediately. He acquired this habit in order, as he said himself, to escape *ennui*. In fact, his slumbers were rather artificially produced than natural. He lived in this manner for several years, and at last died dropsical. His pulse was always slow and full."

The section of the pulse in relation to crises, which comes next, contains some interesting remarks. Doctor F. commences with an account of the ancient and modern acceptations of the word *crisis*, and then proceeds to inquire in what diseases we may fairly expect such a termination. He excludes all of the chronic class, in the first place, and then shows that there are very few even of the acute in which the physician can venture to become a patient looker on at the efforts of nature. We suspect, however, that even in some of the cases allowed by him to be such, it would be a dangerous plan to remain quiet for fear of interfering with those efforts; at least, it must require a great deal of experience to be able to distinguish between symptoms premonitory of such a crisis, and those as arising from an increase of the disease. Besides, we are inclined to think, that even where there is reason to expect a crisis, judicious treatment will sometimes assist nature in bringing it on, rather than disturb her. The section concludes with an account of Bordeu's theory, and the author's opinion of it, the latter of which we shall give in his own words:—

"Even supposing, what I do not admit, that the modifications of the pulse described by him really do exist, yet the exploration and estimation of them is attended with such difficulty and expense of time, that the application of his doctrines appears quite impossible. Moreover, his nomenclature is very arbitrary; and his description of each kind of pulse is much too imperfect for any practitioner to be able to avail himself of it, for the purpose of recognizing and distinguishing them. Besides, his theory contains several striking errors and deficiencies; and the sympathies between the various organs are altogether overlooked."

The next section is entitled, the pulse in general as a sign of danger in diseases, and as an indication of the approach of death. A great portion of it is taken from Bichat's *Recherches physiologiques sur la Vie et la Mort.* The causes and signs of the deviation of the pulse from its natural state, which are next considered, require more notice. Doctor F. divides them into three classes; namely, malformations or morbid organic alterations of the heart and circulatory apparatus; anomalies in the irritability of the heart; and stimuli that disturb its action. His remarks on the first of these classes are chiefly taken from Corvisart and Kreysig; so we need not repeat them here. The physiological causes of the second class have been already more or less adverted to. The pathological are morbid alterations of the fluids; an increase or diminution in their quantity; morbid productions either developed within the system, such as pus, or introduced from without; narcotics, &c. &c. The stimuli are divided into exciting, depressing, and specific. Again, they may considered as natural, or morbid; the former of which may pass into the latter through a change in the quantity or quality. These are both internal. To the external stimuli belong food, atmospheric influence, caloric, electricity, perhaps animal magnetism, and every thing that can act on the senses, or the passions. Of the internal stimuli, the blood is the most considerable. Of the external, caloric, electricity, and light.

The various kinds of pulse considered as symptoms and signs, are next offered to our attention. With respect to the interval between each beat, the pulse may be frequent, or unfrequent, otherwise termed rare: with respect to the time occupied by each, it may be quick, or slow. This distinction we have already explained. Again, with respect to the feel, it may be great, or small; full, or empty; strong, or weak; and hard, or soft. Lastly, with respect to the relation of the beats to each other, the pulse may be regular, or irregular; the latter of which comprehends the intermittent, and some others.

The frequent and rare, and the quick and slow pulses, have been already discussed. The pulse is called *great*, (*pulsus magnus*,) when the column of blood presses so strongly against the walls of the artery as to distend it to the greatest possible degree. Such pulse is also termed *sublimis*.

"It is the sign of a free action of the heart, an unimpeded circulation, and a sufficient quantity of arterial blood."

The *full* pulse (*P. plenus*) is that in which the artery appears to be full even during the diastole of the heart. It

is a sign of the presence of too much blood in the arteries. The *strong* pulse (*P. fortis*) is frequently confounded with the two preceding. It receives its name from the force with which the pulsation strikes the finger, and indicates an excitement of the vital energy of the heart. The *small* pulse (*P. parvus*) is where but a small column of blood is driven into the artery, so that its motion is very inconsiderable, and it undergoes scarcely any expansion. It is sometimes symptomatic of a diminution of the activity of the heart; at other times it arises from obstructed circulation, and at others, from deficiency of blood. The *empty* pulse (*P. inanis*), and the *weak* pulse (*P. debilis*), require no explanation. The *hard* pulse (*P. durus*) is sometimes confounded with the strong, but improperly. Its nature is sufficiently evident from its name. It is symptomatic of a strong irritation of the heart. The *soft* pulse (*P. mollis*), on the contrary, shews that the heart is not in a state of irritation.

The *regular* pulse (*P. æqualis*) is that in which all the beats in a given time agree with respect to quickness, strength, fulness, &c., as well as to the interval between each. The *irregular* pulse (*P. inæqualis*) is that in which they disagree in one or more of these respects; so that there may be several kinds. The most remarkable of these is the *intermitting*, (*P. intermittens*,) which occurs when, in a series of pulsations, one or more are omitted at intervals. This is the habitual pulse of some individuals; but in general depends on various morbid causes. It was said by Solano to portend a critical diarrhœa.

Several other kinds of pulse have been mentioned by authors; but the only ones worth mentioning here, are the *pulsus inciduus*, described by Solano, as that for one, two, three, or four successive pulsations, increases in size and strength, and so on, periodically, and considered by him as portending a critical sweat; and the *dicrotous* or *rebounding* pulse, where two beats follow rapidly, and then there is an intermission. This, according to Solano, invariably presages a critical hæmorrhage from the nose.

The section we have just been considering, occupies no less than thirty pages. As the author dwells on the various causes and complications of, and indications afforded by each kind of pulse he describes, of course, to attempt to give even a sketch of his observations, would occupy too much space, and, after all, it would be too much condensed to be useful. We are satisfied with enumerating the kinds he acknowledges, and introducing a remark here and there. It may not be amiss, how-

ever, to add, that the dicrotous pulse is really deserving of attention, as it may not only lead us occasionally to suspect the approach of a hæmorrhage, but also indicate the presence of one internally in the absence of other certain signs. A case strikingly illustrative of the diagnostic assistance to be derived from attention to this form of pulse, occurred within our own knowledge, not long since: it was one of lingering hæmorrhage into the abdomen, in which several medical attendants of the first eminence were completely at fault, and made very light of the opinion of an individual much their junior, who pronounced accurately upon its nature, merely by attending to this circumstance. The patient having died shortly after, the *post mortem* examination afforded a convincing proof of the correctness of the diagnosis, as the cavity of the abdomen was found full of blood.

The subjects of the three remaining sections are, the means of detecting simulated diseases by the pulse, the cases in which it is of no value, and the proper method of feeling it.

We trust that this analysis of Dr. Formey's work, imperfect as it is, will satisfy our readers that the author deserves to be considered as the most rational, and practically useful writer on the subject, that has yet appeared before the public. Some errors and imperfections, particularly in the arrangement, may certainly be observed; but on the whole, it is far superior to any other we have seen, and we have looked over a great many.

The Cyclopædia of Practical Medicine. Edited by John Forbes, M. D., Alexander Tweedie, M. D., and John Conolly, M. D., London. Published in monthly parts.

CONVULSIONS.

In continuing our review of the Cyclopædia, we bring the above article before our readers. Convulsions are but a symptom, and it would be as difficult to write a good essay upon them in the present state of pathological medicine, as it would be to write a satisfactory essay upon cough, or upon vomiting. An article upon convulsions will be looked upon by the physicians of the school going out as defective if it do not go into the minutiæ of all the causes giving rise to them; and, on the other hand, the medical reader, trained in the school of the present day, will say that important diseases are given under a false heading, if the various diseases are entered into, of which convulsions form a part, and that, under this head, a writer should

no more enter on the discussion of the pathology of internal organs, or on the treatment of their diseases, than he should proceed to describe the phases of pneumonia under the head of "cough," but that the article "convulsions" should merely contain a description of their varied shapes, without any notice of their pathology or treatment, which is to be more appropriately learned under the heads of the different diseases of which convulsions may be an effect. There is from these considerations a greater difficulty than the casual reader would at first sight suppose, in taking care, on the one hand, not to leave an article imperfect, and, on the other, to avoid rendering it too diffuse. This median line Dr. Crawford has caught, and has adhered to perhaps as closely as could be done; and if he has departed from it, it is on the side to be easily excused, that of giving a little too much. He commences his article by an examination of the term *convulsion*, which he defines to be "a diseased action of the muscular tissues characterized by violent involuntary contractions, with alternate relaxations;" and then divides them into species, only differing in degree, into *tonic* convulsion where there is not alternate relaxation, but where the involuntary contraction of a muscle is permanent, as in tetanus, or in the spasmodic rigidity of a limb produced by inflammation of a portion of the brain or spinal marrow; and "*clonic* convulsion" where there is alternate relaxation, as in hysteria, St. Vitus's dance, &c. There is here a looseness of expression, for if "contraction, with alternate relaxation," be the distinguishing character of the generic term convulsion, there is a contradiction in calling a state of the muscular fibres convulsion, in which there is no alternate relaxation.

Cullen's arrangement is better, both because it is that universally followed, and because it is more accurate. He makes spasm the genus, including under it all diseases which consist in "*motu abnormi*" of all the muscular or moving fibres, whether accompanied or not by alternate relaxations; and then divides these into two species, the generic character in voluntary contraction being common to both, calling the first, or that not succeeded by relaxation, "spasm," and the second, or that succeeded by relaxation and again immediately repeated, "convulsion." Dr. Crawford properly explains, that under the article "convulsion," he proposes to include only those varieties of convulsive affection which could not be well included under the heading of any particular disease.

"*Local Convulsions.*—When the eye-lids are affected, if the convulsion is confined to the levator palpebræ superioris, the upper eye-lid is forcibly drawn up, and cannot be closed; the eye-ball con-

sequently remains uncovered, and is exposed to painful irritation: this occurs sometimes as a local affection, especially in neuralgia of the supra-orbital nerve. If the orbicularis muscle be affected, the eye-lids are forcibly closed, and can with difficulty be separated. Slight convulsions of the muscles of the eye cause a rotatory motion of the globe from side to side or else upwards. This is a frequent symptom of visceral irritation, especially in children, in whom it often occurs during sleep. When these muscles are more violently convulsed, there is strabismus, or a violent contortion and rolling of the globe in the socket; or else the eye is firmly fixed, staring and protruding. The iris being possessed of contractility is susceptible of convulsive action; the pupil is then either very much contracted and immoveable, or else it is alternately closed and dilated by quick and irregular oscillations. Both pupils may be differently affected, one remaining fully dilated when exposed to light, whilst the other contracts; or one may remain stationary, the other being alternately contracted and dilated. There are in this respect great variations.

"The convulsions of the muscles of the face give rise to a great variety of remarkable and opposite expressions. The whole of the features may be fixed and immoveable, or there may be a constant change of expression by the momentary contraction of separate muscles in quick succession; or the convulsions may affect only some of the features, causing, for instance, slight evanescent twitchings of the lips or distortion of the mouth; or else an elongation and drawing up of the commissures of the mouth. This last variety gives rise to a species of convulsive laughter, sometimes closely resembling the smile and laughter of health, especially in infants, but often more violent: this is the *risus Sardonicus* of the ancients. When the muscles of the jaws are affected, there may be grinding of the teeth or a violent clattering of the jaws; or else there is a permanent rigid spasm, rendering the lower jaw fixed and immoveable, as in trismus. Persons of a highly nervous temperament are sometimes affected with an habitual twitching of certain muscles of the face; these generally arise from constitutional causes, and are difficult to be remedied. Convulsions of the muscles of the tongue cause it to be violently twisted in the mouth so as to push out the cheeks, or else it is forcibly protruded; it is very liable in that case to be severely wounded by the teeth, and has in some rare cases been completely cut off. A tremulous state of the tongue when put out, is a sure sign of general nervous debility.

"When the muscles of the neck are simultaneously convulsed, the neck feels hard, and the head is drawn back; if only those on one side, the head is drawn to that side or partly turned round. There may be, from this cause, either a permanent rigid contraction, or a convulsive agitation, or a simple tremor of the head and neck. These modifications are observed in wry neck and *paralysis agitans*.

"Convulsion of the muscles of the pharynx impedes deglutition, and gives rise to spasmodic dysphagia. The convulsions of the mus-

cles of the larynx cause laryngeal dyspnœa and suffocation, and either various alterations or a total extinction of the voice: these are frequently symptoms of inflammatory and spasmodic croup. The sensations of stricture and strangulation in the throat which so often attend hysteria, chorea, hypochondria, &c. are owing to a convulsive state of the anterior muscles of the neck.

"Convulsive affections of the muscles of the thorax (the intercostals, diaphragm, &c.) are sometimes the primary cause of habitual dyspnœa or of violent paroxysms of cough and suffocation, constituting a variety of convulsive asthma. When the convulsions are severe, the breathing is very irregular: there are a few short inspirations and expirations; then a long intermission without any breathing, followed by several deep inspirations, with heaving of the chest and sighing: in some extreme cases the constriction of the chest has been so violent as to stop the breathing altogether and cause asphyxia. This irregular and occasionally hurried breathing gives rise to a corresponding state in the action of the heart, which becomes violently increased; there is a sudden and considerable rise in the frequency of the pulse, which might be mistaken for fever; the circulation subsides, however, with the paroxysm, to its natural standard." A convulsive state of the diaphragm gives rise to hiccup, which is sometimes a most distressing and obstinate complaint."

The explanation of the cause of hiccup is insufficient. Let any one imitate as closely as he can the spasmodic affection of the diaphragm, which is *one* of the concurring causes of hiccup. He will not produce this affection; but let him then, while imitating this action, suddenly close the glottis at the same moment, and he will immediately produce distressing hiccup; the peculiar sound that distinguishes hiccup, and the distress felt, being then plainly referrible not to the spasm of the diaphragm, but to the sudden closure of the glottis; and to this cause is also referrible the puffing and congestion of the face so often produced by hiccup. The mere convulsion of the diaphragm would not produce congestion, &c., for of itself it would not interfere much with the circulation of blood through the lungs, and its aëration; the intercostal muscles being unaffected, and capable of carrying on respiration, but when the glottis is convulsed, and respiration, and consequently the circulation through the lungs, is very much obstructed, and congestion of the vessels of the face and head, sometimes amounting to the effect of producing apoplexy, is the result. A knowledge of this particular in the production of hiccup is not without its practical uses, for independantly of hiccup arising from sympathy, with disordered function in the stomach, it is occasionally caused by local irritation of the larynx produced by lodgment of irritating mucus, and the expulsion of this either by gargle or by a violent effort of straining with the

muscles of the pharynx, removes hiccup that had resisted all other means.

On the prognosis of convulsions, it may be laid down, almost as an axiom that their danger is in an inverse proportion to the ease with which they are excited. On this part of the article we would in good humour recommend to Dr. Crawford's recollection, "give unto Cæsar that which is Cæsar's." The following quotation from his article, put in apposition with a portion of the article "Convulsion," from the "Dictionnaire de Medicine et de Chirurgie Pratiques" will explain what we mean.

"In those cases in which, from great nervous susceptibility, convulsions are very easily excited, they more readily subside, and are the less dangerous; they are thus attended with less danger in women than in men, in youth than in old age. This fact had not escaped Aretæus, who said, *Mulieres nervorum distensionibus magis opportunæ sunt quam viri, sed et frequentius etiam liberantur.*" Lib. i.—*Adair Crawford*, 1832.

"En general, les convulsions sont d'autant moins dangereuses qu'elles sont plus faciles a exciter, et voila pourquoi elles sont moins dangereuses, toutes choses egales d'ailleurs chez la femme que chez l'homme, chez les habitans des villes que chez ceux des campagnes. Cette remarque n'avait point échappé a l'illustre Aretée quand il dit. Mulieres nervorum distensionibus magis opportune sunt quam viri, (sed et frequentius etiam liberantur)." Lib. i.—*P. Jolly*, 1830.

In the present day, when what may be called vascular medicine is most in fashion, and leads us, on the appearance of any symptom supposed to indicate vascular fullness of a part, to the repeated use of the lancet or depletion, it is well for the practitioner to bear in mind that nothing tends more to produce local congestion than general debility, and that although he may, by evacuation, give relief from such momentary attack, the debility thus produced, by repeated evacuations, will most certainly render such attacks more and more frequent. In no class of diseases is this evil more frequently produced than in diseases of the nervous system. The mean to which to carry evacuation is one of those parts of practical medicine which can only be learned by experience and tact; it cannot be taught, but the inexperienced practitioner can at least be made aware of its existence, and may thus learn to watch for it. On this point the following observation of Dr. Crawford should be carefully borne in mind:

"*Causes.*—The causes of convulsions are predisposing and exciting. The *predisposing* causes are either constitutional or accidental. Constitutions in which the nervous temperament predominates

are the most obnoxious to convulsive affections. We know nothing of the essence of the nervous power, but one of the remarkable laws which regulate its operations is, that within certain limits its irritability increases as its energy diminishes. The nervous temperament derives its essential characters from nervous debility, combined with an increased susceptibility to external impressions. This condition of the nervous system is commonly observed in persons of relaxed, debilitated, and delicate fibres; they are extremely sensitive to the action of all kinds of stimuli, whether physical or moral, and are endowed with great mobility of disposition and fickleness of temper; they are also frequently predisposed by their laxity of fibre, to plethora and we shall see presently that over distension of the blood-vessels is not unfrequently an exciting cause of convulsions. The nervous temperament is, however, sometimes observed in persons of a thin and delicate habit of body, and associated at others with a firm and rigid, though spare fibre. It is evident, from what has just been stated, that women and children will be more predisposed to convulsions than men or persons advanced in life."

Dr. Crawford divides convulsions into *idiopathic* and *symptomatic*; the first, when convulsions proceed from an irritating cause, applied directly to the brain itself, to the spinal cord, or to the trunk of a nerve supplying a set of muscles; and when the means of removal must, consequently, be directed to the brain, spinal cord, or nerve affected. Under this class come convulsions proceeding from meningitis of the brain, or spinal cord, or trunk of a nerve, &c. The second, symptomatic, when the irritating cause is not applied directly to the brain, but—

"Instead of its being applied either at the origin or in the course of the nerves, and the irritation being directly transmitted to their extremities, these pulpy extremities themselves receive the first irritating impressions from the various stimulating agents they come in contact with on the surface of organs; these morbid impressions are then transmitted, along the nervous fibres, to the brain and spinal marrow, which organs communicate the irritation, by reflection, to the whole frame. The great sympathy of several organs with both the brain and spinal marrow becomes, thus, a prolific source of general disturbance to the entire nervous system, of which the uterine and digestive organs afford examples in the production of hysteric, and of various other convulsive affections."

Of this kind are the convulsions observed in infancy during dentition. The young tooth growing up irritates the extremities of nerves distributed to the gum over it; these carry the irritation backwards to the brain, which then reflects that irritation, as it were, through all the nervous trunk proceeding from

it, and general convulsions of the whole body are the result. Of this species, too, is a remarkable case related by Sir E. Home. A gentleman hurt his thumb in hunting; the nerve distributed to the part became very irritable—very susceptible of impressions; and if at any time an extra excitement from cold or from injury was applied to it, a tingling sensation immediately ran back along it to the head, and a fit of general convulsions, resembling epilepsy, followed. The patient, to prevent this, carried a small tourniquet loosely worn on his arm; by tightening this on his first feeling the warning symptoms in the thumb, and cutting off sensitive communication between the source of irritation and the brain, the paroxysms were prevented. Although in most cases, on the cause being removed, the symptomatic convulsions cease, and there is no disease of brain left; this is not always the case. It is a singular law of the pathology of the nervous system, that if a diseased action have taken place in the extremity of a nerve, although itself of no great consequence, or not sufficient to produce death, it may cause diseased action in the origin of the nerve, or in the part of the brain from which that nerve derives its origin, and thus cause death even after the original irritation, which had existed at the extremity of the nerve, has been removed. We frequently see instances of this in hydrocephalus or inflammation of the brain succeeding dentition in children; and a striking instance of a similar kind is related by Lallemand, in which in an operation, a nerve was, through accident, included in a ligature; the result was inflammation and "ramollisement" of the optic thalamus of the opposite hemisphere.

There is another cause of convulsion no less to be guarded against than irritation, either direct or indirect, imitation.

"Convulsive affections are very much under the influence of habit; so that even after the removal of the exciting cause, there may be regular repetitions of the attack, in consequence solely of the portion of the nervous system which is affected having acquired a depraved habit. Many curious instances of this description are to be found in medical writings. These habits of recurrence are sometimes not broken off without great difficulty. Another peculiarity of convulsive affections is, that they can be acquired by the mere power of imitation. In sensitive children, and young females endowed with great nervous susceptibility and a lively imagination, the influence of example on the nervous system is very remarkable; the instances of individuals so constituted being seized with an attack of convulsions, chorea, or epilepsy, merely through the shock experienced by witnessing others affected in the same manner, are by by no means uncommon. In the history of the dark ages, when superstition and fanaticism had a strong hold of men's imaginations,

there are recorded several instances of nervous affections combined with various hallucinations, having spread like epidemics, from the mere contagion of example. An extraordinary instance of the influence which the strong excitement of religious fanaticism is capable of exercising over the nervous system, was seen as late as 1724 in Paris, during the persecution of the Jansenists; after the death of Deacon Paris, one of the highly revered chiefs of the sect, crowds of his followers went in pilgrimage to the place of his burial at St. Medard, where they fell on his tomb, and were apparently seized with the most violent convulsions: they asserted, that, after passing through this ordeal, they arose miraculously cured of any disease with which they might be affected; and this practice was continued for a considerable time. Some of his disciples were, no doubt, impostors; but it is well authenticated that many credulous zealots actually worked themselves into convulsions by the mere power of their imaginations."

Hence, whenever a convulsive affection has shewn itself in a family, particularly if any of the members of it be young females, or in a school, the individual affected should be immediately removed. For want of this precaution, we have seen epilepsy spread through several members of a family. It is not alone by congestion of the vessels of the brain and spinal cord, or by irritation, that convulsions may be produced, they arise under circumstances precisely the reverse of those states of the brain we have considered; and what may at first sight seem paradoxical, that they are produced not only by too much blood circulating in the brain, but also by too little.

"Convulsions are sometimes produced by a state of the brain the very reverse of plethora or vascular congestion; and when it is, on the contrary, deprived of the supply of blood necessary for the continuance of its functions. This often happens after a large and sudden abstraction of blood from the arm, or profuse hemorrhage, and during the last struggles of life. It should be remembered, therefore, that convulsions arise both from an increase and a diminution of vascular action; and that *nervous debility* is the essential character of that state of the nervous system in which they originate: *a repletione aut ab evacuatione fit convulsio*, is one of the aphorisms of Hippocrates. It is also deserving of notice that many of the appearances of vascular turgescence which may be observed in the brain and spinal cord in fatal cases of convulsion, are the mere accidental effect of the violent struggles of the patient in his last moments, the same as occur in all cases of violent death."

Much ingenuity has been exercised on the question, "what is the state of the nervous fibre causing convulsions?" A moment's consideration of the different circumstances under

which they arise, must convince us that there is no one particular state of the brain or nervous fibre necessary to the producing of convulsive motions. It has been laid down, that a certain degree of healthy excitement and circulation maintains the natural functions of the nervous system; that a greater degree of excitement and circulation, amounting to irritation, produces convulsions. This is one of those specious generalization of medicine that will not bear examination. One individual has an attack of congestion of the brain, and the symptoms are convulsions; another is bled to fainting, and the effect is convulsions; the head is lopped off a fowl, and the whole trunk suffers convulsions. There is nothing analogous between the first of those cases and the two last; and if we examine all the different states of the brain or nervous system under which convulsions appear; and if we further admit, that all the different states giving rise to convulsions, must have some one incident or circumstance in common, on which the convulsions immediately depend, we arrive at this conclusion, and nothing farther, that when the governing power, which the brain or nervous system exerts over muscular action, is either taken away suddenly or deranged to a certain degree, the muscular action, for want of its governing power, then presents that irregularity to which we give the name of convulsion; and that the governing power which the nervous system exerts, may be equally deranged by too much excitement or by too little—by an overflow of blood, or by a deficiency. The supposition that convulsions depend on irritation, will not bear an examination; and another supposition put forward, that convulsions depend upon irregular accumulations of nervous fluid, is an attempt to go farther than our knowledge at present authorizes us to venture. Were the supposition, that irritation is the universal cause of convulsion to be admitted, it might have a very injurious effect upon our practice. For the guidance of our practice in convulsions, we must bear in mind the principle we have from facts, that convulsions may proceed from over action or a state calling for depletion, or from an opposite state to this, calling for opposite measures. On the treatment as recommended by Dr. Crawford, we shall not dwell; it contains only the measures well known to every practitioner; and it is in this, as in other branches of practice, our success depends, not so much on the use of new or extraordinary means of cure, as on the use of those already within our power, regulated in their application by sound principles.

"INFANTILE CONVULSIONS."

This article, by Dr. Locock, on a very important disease, is one of the best in the Cyclopædia, containing a mass of information, and so condensed that not a single line could have been omitted. He commences by the following judicious observations:—

"The present article is intended to include only those convulsive diseases which are either peculiar to the earliest periods of life, or are accompanied with such circumstances as modify the symptoms, and require some peculiarity in the treatment. Convulsions are so frequent in young children, and so often fatal, that it becomes of great importance to consider whether their nature, causes, and treatment, are properly understood. Without hesitation it may be stated, that till very recently authors and practitioners were by far too apt to generalise in these cases, and the practice consequently degenerated into routine, and that often on mistaken principles. In most cases the convulsions of young children are symptomatic of some other disease; but although the recollection of this fact is extremely important,—as upon the nature of that particular disease the treatment chiefly depends,—yet there is sufficient danger in the immediate attack to render it proper to give a full history, in the first instance, of the affection itself, the symptoms which are present, and the best mode of alleviating them."

Previously to the onset of the attack, there are, very frequently, premonitory signs, by attending to which, the violent attack itself may be often warded off.

"The most striking of these alterations in the child's usual habits are, the starting at very slight noises, a disturbed sleep, with frequent fits of crying from trifling causes, and great peevishness of temper. There is also, often, a frequent fixing of the eyes, an oscillatory motion of the pupils, a momentary contraction, and again a sudden dilation of the pupil, and a want of consent between the pupils of both eyes, so that one will contract whilst the other dilates. The countenance is alternately flushed and pale; sudden animation is followed by as sudden a fit of languor, and irregularity in the breathing, particularly with short catchings of the breath followed by long and deep inspiration. Hiccough, too, frequently occurs. The fingers are kept constantly twitching, or the hand is clenched, the thumb stiffly contracted on the palm, the toes drawn in, and the foot and wrist bent downwards. To these symptoms may be often added a peculiar blueness about the mouth, and a pinched countenance. Many of the above appearances, however, are overlooked by the attendants; and often without any warning whatever a convulsion takes place.

"In the attack itself there is, says Dr. John Clarke, 'a universal spasmodic contraction of all the voluntary and many of the involuntary muscles of the body, accompanied by foaming at the mouth, protrusion of the tongue, staring of the eyes, distortion of the eyeballs, laborous and obstructed respiration, sometimes accompanied with a violent redness of the face and scalp at the beginning of the paroxysm, followed by a purple colour of the whole body at the end of it.' This, however, is the history of a severe case: there may be only slight twitchings of the face or of the limbs, with a distorted eye, and bluish circle round the mouth. The limbs may be alternately relaxed and contracted, and only one part or one side of the body may be convulsed at the same time: in some instances this happens alternately with a similar affection of the other side several times in regular succession. As the paroxysm subsides, the convulsive motions become gradually less violent and less constant; the natural colour and appearance returns; the child takes a deep and full inspiration and is then able to cry; and frequently a refreshing sleep succeeds. The attacks may be renewed and again subside several successive times, till perfect relief is obtained; or, on the other hand, even the first paroxysm may be fatal. The convulsions may be momentary, or may last only for a few minutes; or they may continue, with but short intervals, for a great many days. Except the exciting cause of the paroxysm is of such a nature as to be attended with fever or disturbance of the intellectual functions, these characters are not essential to an attack of convulsions."

The observations on, and examination of the prevalent opinion, as to the state of the brain in infantile convulsions, are correct and judicious. As we have already in the preceding pages observed, at some length, on the very opposite states of the brain, in the adult, in which convulsions arise, we shall not repeat our observations here; but this part of the question is of so much practical importance in the treatment, more particularly of children, from whom we cannot receive an account of their sensations, that we shall be only doing our duty by giving to our readers the whole of the paragraph relating to the pathology of the disease.

"*Pathology.*—It has been laid down as an axiom by the late Dr. John Clarke, 'that in every case of convulsions the brain is at the time organically affected, either directly or indirectly.' As the management of the case depends essentially upon a correct view of this important question, it is highly necessary to investigate its accuracy. Mr. North has very ably exposed the fallacy of Dr. J. Clarke's assumption, and the errors into which a supposed existence of 'head affection' has led many practitioners. That the nervous system is implicated in the immediate convulsion is not denied, but that the brain is 'organically' affected, or that even a congested state

of the vessels of the brain takes place in every case, is extremely improbable. The brain is often in a very opposite state to that of vascular excitement or plethora; being on the contrary, from the continuance of exhausting causes, placed in that condition of 'diminished energy of the vital force,' which leads to what has been called nervous irritability. The distinction between these two opposite states may be recognised by an observant eye with tolerable facility, and by attending to the previous history and condition of the patient, and to some peculiarities in the attack itself. Where there has been a hot skin, particularly of the head and face, a flushed countenance, a rapid and hard pulse, a suffused red state of the conjunctiva, a contracted pupil, with intolerance of light,—an excited circulation through the brain very clearly exists, probably leading on to inflammatory action. And again, where the child is heavy and stupid, the pupils dilated, the eyes occasionally or constantly contorted, and the power of fixing both on the same object much impaired; the pulse irregular or slow; the veins on the forehead, neck, and scalp turgid and dark; the countenance bluish; the head large, occasionally hotter than natural; and the *fontanelle permanently elevated and convex*;—a congested state of the vessels of the brain, especially of the sinuses, evidently exists. But on the other hand, it is very common to meet with convulsions where the child is pale and thin, the body wasted by illness or by violent and exhausting remedies, the skin cooler than natural, and the veins on the surface apparently bloodless. In such cases the head, at first sight, looks disproportionably large, but this will be found to be an erroneous impression, arising from the diminished bulk of the body and neck. In this description of case, also, there is a very important guide, (though not noticed in books on the subject,) viz. the *fontanelle being depressed and concave*. Although there may be drowsiness and stupor, a dilated pupil and squinting, and although during the immediate convulsive paroxysm, by the violence of the muscular agitation, the countenance becomes flushed, the vessels of the scalp loaded, and the fontanelle elevated, yet this condition is only temporary, and any thing but a state of vascular energy or plethora can be supposed possible. The eyes of the profession have been opened latterly to this condition of the brain in infants, as simulating *hydrocephalus*, by the writings of Drs. Gooch and Marshall Hall; and the same valuable observations are quite as applicable to the subject of convulsions. It will be easily understood, therefore, how faulty must be the routine practice of extracting blood, as a matter of course, in all cases of convulsions."

The diagnostic sign, or state of the fontanelle, as described in the above passage, merits not only attention in convulsions, but in most diseases of infants, more particularly in all those in which the brain seems to be engaged. In many cases of apparently incipient hydrocephalus, in which there is great irrita-

bility of the nervous system, and of the digestive organs, the state of the fontanelle will often tell us, that, under the dread of one disease, we have, in our treatment, been running into another, and that instead of continuance of depletion, counter irritation, &c., our future practice should be such as will give general tone and strength to the system. We need not remind the practitioner how numerous are the causes that may give rise to convulsions in children, and how necessary it is that he should bear them in mind, in order to discover the source from which an attack of convulsions may spring. Dr. Crawford is inclined to think that all convulsions in children are merely symptomatic, and that "it may be doubted indeed whether *idiopathic* convulsions ever occur." But if idiopathic convulsions mean those having their primary seat in the brain, or spinal cord, the sense in which idiopathic is used in the preceding article on general convulsions, there can be no doubt that children are subject to idiopathic convulsions, and (from the vascularity of their growing brain) even in a greater degree than adults. There is a source of convulsions to which Dr. L. has not alluded, and which is worthy of attention—we mean diseases of the spinal cord. In Ollivier's work upon the Spinal Cord, there some instances of convulsions arising from this cause. In one instance the convulsions were at first partial, confined to an arm, but finally spread over the whole body, as if from sympathy. On dissection, a tubercle was found compressing the cervical portion of the cord. In another case, the cord was found (also in the cervical portion) in a state of chronic inflammation. The diagnosis of such affections arising from disease of the medulla spinalis is not at present satisfactorily known; but it may be remarked of the former of these cases, that consciousness was retained in the commencement of the convulsive fits, a positive indication that the brain itself was not seriously engaged. From analogy, and from what we know of like cases in adults, we should be inclined to say, that on either seeing a child affected with convulsions at their first onset, or by getting an accurate history, we ought to be able to make an accurate diagnosis as to whether the source of convulsions had its origin in the brain, or lower down in the central nervous cord. The advice on treatment is concise and judicious.

"*Treatment.*—The treatment of the immediate attack is generally well understood, even by mothers and nurses. The great point perhaps is not to attempt too much. A warm bath is usually the first thing tried, and will often alone be sufficient to abate the paroxysm, but is not to be used indiscriminately. Other means are—dashing cold water on the face and head, wet clothes or pounded ice

constantly applied to the scalp, clysters of aromatic distilled waters, or of assafœtida, combined with castor oil or the neutral salts; chafing the hands and feet with brandy or æther. Should the abdomen be distended with air, which is very commonly the case, a few drops of sal volatile may be given in pepperment-water, and the belly rubbed freely with the hand, or with any gently stimulating liniment. A purgative of an active character, consisting of calomel with jalap or scammony, may be given if the child can swallow; or should any improper article of food have been recently taken, an emetic should be administered. It is not always possible to collect accurate information on this point at the time, for it does not always follow that the offending aliment should have been very recently eaten. The writer attended a case where, vomiting being excited, immediate relief was obtained by the expulsion of several indigested raisins, which had been given to the child (four years of age) nearly a week before. It is the constant plan of some practitioners to abstract blood in all cases of convulsions in young children; but, as we have shown already, this is not to be defended in all cases by reason, nor does experience justify the practice. Where, however, a plethoric or too energetic condition of the vessels of the brain obtains, it is undoubtedly desirable to relieve the head by bloodletting. Very often, where there is an obstinately constipated state of the bowels, purgative medicines will not succeed in removing some offending matter from the intestines until cerebral pressure has been removed by taking away blood from the neighbourhood. For this purpose, opening the jugular vein is the readiest and perhaps the most effectual method; or, should it be preferred, cupping, or the application of leeches on the temples, or behind the ears, may be had recourse to. The quantity of the blood drawn must depend on the strength of the child and the violence of the symptoms; and although on the whole, under such circumstances, children of a tender age bear the loss of a larger quantity of blood than would be supposed, very safely, yet care must be taken lest the child be brought into that state of exhaustion in which convulsions are very apt to occur from an exactly opposite cerebral condition. The writer of this article saw a plethoric child, of a year old, cupped to fainting during a severe convulsive attack, and no sooner had the faintness subsided, and the child was left bleached, with a *depressed* fontanelle, than a second and still more violent convulsion took place, from which it was with extreme difficulty recovered. Should the child be of an age at which the process of dentition would be at all likely to be going on, we should be overlooking a very essential part of the treatment if the gums were not to be freely and extensively scarified: long before a tooth is near the surface this is often of great service, and removes one of the most frequent causes of irritation. Should the case be one of great irritability of brain without plethora, after attacking the exciting cause where it is possible to remove it, should the convulsions still continue, antispasmodic medicines may be liber-

ally administered, such as the assafœtida mixture, ammonia, camphor, æther and musk, and even opium; but from the uncertain effects of the latter medicine on very young children, this must be done with great caution. Where there has been a very irritable state of the bowels, opium is particularly useful when combined with chalk and aromatics; the pulvis cretæ compositus cum opio of the pharmacopœia is a convenient form, from the small quantity of the opiate which it contains; from one to ten grains may be given, according to the age of the child, and repeated every hour or two, till the desired effect is produced. Most of the advertised *convulsive powders*, as they are termed, consist of chalk combined with musk and aromatics. In some instances, and not always in very weak and exhausted children, there is constitutionally an exceedingly irritable state of the nervous system, leading to convulsions resembling those of an epileptic nature. In these cases, tonics of a very decided character, iron for instance, have been found by the writer sometimes as useful as they have long known to be in a more advanced age. A child of *two months'* old, large and fat, was seized with violent convulsions suddenly, the bowels having been disordered from bad breast-milk for a few days previously. The convulsions lasted for *seventeen days*, sometimes occurring three or four times in an hour, and never ceasing for more than four or five hours at a time. The fontanelle was depressed and concave always in the intervals of each paroxysm, and no blood was taken in consequence; the treatment consisting of antispasmodics, external applications, clysters, purgatives, and also of opiates, one drop of laudanum having been administered every hour for a considerable number of doses. This treatment was pursued for a fortnight with no permanent improvement. On the seventeenth day the bad success of the previous remedies induced the writer to try the carbonate of iron, of which five grains in honey were given every two hours for two days. After the second dose the face became florid, the fontanelle elevated, and the convulsions ceased. In the intervals of the fits the child took copiously of breast-milk, by means of a spoon, during the whole period. The infant remained well for a twelvemonth, and then died from hooping-cough."

The observations on bleeding are well worthy of attention: we can scarcely, however, coincide with the recommendation of bleeding from the jugular vein. It is sometimes exceedingly hard to control it, particularly if the child, on recovery, screams on seeing the blood; the convulsive sobbing of the little frightened patient will almost certainly cause the lancet wound to open afresh, and more blood will be lost than we desire, tending to bring the child into that very state, the result of excessive depletion, and which Dr. Locock so judiciously guards us against; and if we attempt to use pressure or bandage on the neck, to restrain the hemorrhage, we may do much greater injury by

obstructing the return of blood from the brain than we had effected good by our previous depletion. If we are not able to obtain a sufficient quantity of blood from the arm, we are always able, in young children who can bear the loss of blood, to apply leeches in such a number as to combine the sudden impression of a general blood-letting, with all the advantages of a local depletion; and having applied them in sufficient number to attain this end, we may then stop the bleeding immediately on taking them off, by the application of nitrate of silver. The cold affusion is a remedy of immense power, when properly applied in the convulsive affections of children. Its importance, and the necessary directions for its application, are not given at such length as they deserve by Dr. Locock. To supply this deficiency, we refer our readers to a paper on the application of "Cold Affusion in Convulsions," by Dr. Graves, in the second number of this Journal; merely observing that its power is rendered still greater if the patient be held in a standing posture in a warm bath, while the affusion is used in the manner so graphically described by Dr. Graves. In conclusion, we have to express our warmest approbation of this article by Dr. Locock; it is precisely what it should be, constituting part of a work on practical medicine; we hope to see many more from the same pen, which we would propose as a model, both in style and matter, to future contributors to the Cyclopædia.

SCIENTIFIC INTELLIGENCE.

CHEMICAL SCIENCE.

Researches on the Blood in Cholera, by Mr. Andrews, *of Belfast.*—Specimen I. Cholera Hospital, Belfast.—This was obtained from a rapid case of cholera; but I know nothing more of its history.

The blood was taken from the vena cava immediately after death, and introduced into a vial, in which it afterwards coagulated. The serum was slightly tinged red, but perfectly transparent; the crassamentum was not in this case darker than it often appears in healthy blood. Their relative proportions were—

Serum - - - - -	41.6
Crassamentum - -	58.4
	100.0

But as the serum was merely drawn off, these proportions do not admit of comparison with the healthy ratio of Berzelius.

Serum.—Specific gravity 1.038; had an alkaline reaction. 32.518 grammes of it were evaporated to dryness; and after being reduced to a coarse powder, dried till they ceased to lose weight on a warm bath, the temperature being prevented from rising too high by placing some shreds of cotton beneath the capsule containing the albumen. The dried mass weighed 4.078 grammes. This was now incinerated and washed repeatedly with boiling water, which was evaporated to dryness, and the saline matter thus obtained calcined, and found to weigh .243 gramme, to which, adding .027 (obtained, as we shall hereafter mention), we have the saline matter soluble in water equal to .27 gramme.

About .02 gr. of this matter was carefully examined to determine its nature. By spontaneous evaporation it yielded a set of crystals, which, examined by a microscope, proved to be principally cubes intersected by others of an acicular form. Two or three of the largest and purest of these cubes were dissolved in water; the solution had a strongly alkaline reaction, and was precipitated by nitrate of silver, the precipitate being soluble in ammonia. The rest of the crystals were now dissolved in a drop of water: pure ammonia was added to a minute portion of it, and a faint cloud appeared, indicating the presence of phosphoric acid. The remainder of the solution was divided into two portions; to one of which tartaric acid was added, and to the

other chloride of platinum. Evolution of gas took place in both cases; and in the one solution, numerous clusters of crystals (whose shape was a six-sided prism) appeared in a few seconds; while in the other a granular deposit of octohedral crystals was soon formed.

To the remaining .25 gr. of saline matter, chloride of barium was added in excess: a white precipitate fell, but the solution continued alkaline, and by evaporating it to dryness, a portion of insoluble matter remained, which had principally arisen during the evaporation, forming a thick crust on the surface of the liquid. The solution still continued slightly alkaline, and became opake on the surface. These experiments indicate the presence of uncombined alkali. The carbonate of baryta weighed and estimated for the whole saline matter was equal to .0972 gramme, equivalent to .0525 carbonate of soda. It dissolved with effervescence in nitric acid, leaving a residue of .012 of sulphate of baryta, equivalent to .008 of sulphate of potash. The nitric acid solution was precipitated by ammonia, and prussiate of potash occasioned a faint white cloud.

In order to obtain the remainder of the saline matter from the incinerated mass, it was boiled in acidulated water, .050 gr. of saline matter was obtained, of which .027 gr. dissolved in water. The remainder was dissolved in nitric acid and precipitated by ammonia of a slightly red colour, then re-dissolved in nitric acid and precipitated by oxalate of ammonia; but I could not detect any magnesia in it, probably from the minute scale on which the experiment was performed.

The serum therefore contained—

Water	874.59
Albumen	116.40
Chlorides of sodium and potassium with uncombined alkali	6.69
Carbonate and phosphate of soda	1.36
Sulphate of potash	.25
Phosphate of lime	.71
	1000.00

Crassamentum.—23.49 grammes were dried in the same manner as the albumen; they lost 16.472 gr. of water. This water arose from the serum in the crassamentum, and must have been united, by its analysis, to 2.360 gr. of albumen and salts. Hence the crassamentum consisted of 18.832 serum, and 4.658 red globules and fibrin.

58.58 grammes of the same crassamentum were washed to separate the fibrin, but the process was very tedious; and after persevering for above a week, I did not succeed in rendering the fibrin perfectly colourless. It was dried at the same temperature as the albumen and crassamentum. It weighed .52 gr., and was of a dirty green colour.

From these experiments the composition of the blood was—

Water - - - -	78.43
Albumen and salts - -	10.00
Red globules - - -	11.06
Fibrin - - - -	.51
	100.00

Specimen 2. Cholera Hospital, Ballymacarrett.—This specimen of blood was taken from a male patient (ætat. 50), who had been seized with cholera the same morning, and died early on the following day. From the commencement of the attack he had passed involuntary stools, and vomited copiously. The pulse was perceptible before he was bled, but afterwards became very faint and irregular. The blood flowed with difficulty, and was of a very dark colour and viscid consistence. It coagulated perfectly, the serum was yellow and pure, and the crassamentum much darker and more bulky than usual.*

Serum.—Sp. gravity 1.045; alkaline reaction; taste saline, similar to healthy serum. 14.377 grammes of it were analysed in precisely the same manner as the preceding specimen. Its constituents were—

Water - - - - - - - -	847.02
Albumen - - - - - -	144.36
Chlorides of sodium and potassium, with free alkali - - - - - -	5.96
Carbonate and phosphate of soda - - -	1.62
Sulphate of potash - - - - -	.22
Phosphate of lime with a trace of iron -	.82
	1000.00

Crassamentum.—The blood weighed 77.94 grammes, and the crassamentum, with a considerable portion of impure serum, 58.27 gr. The latter contained 47.604 gr. of serum, and .231 gr. of fibrin, of a buff colour and pretty pure. The composition of the blood was therefore—

Water - - - -	73.11
Albumen and salts - -	13.21
Red globules - - -	13.38
Fibrin - - - -	.30
	100.00

Specimen 3. Lunatic Asylum, near Belfast.—This was taken from a female patient (ætat. 20) in the state of collapse, the radial pulse not being perceptible when the blood was drawn. It flowed in

* In this, as well as in all the following cases, the blood was received into a vial, which was immediately closed. This precaution was necessary, as serum exposed to the air evaporates with great rapidity.

a continuous stream for a few seconds, but afterwards trickled with extreme difficulty. The patient died next day. The blood was black and thick; it coagulated as usual.

Serum.—Sp. gravity 1.040; of a pure yellow colour; 4.611 gr. left, by desiccation, .636 gr. of albumen and salts. It contained therefore—

Water - - - -	865.95
Albumen and salts - -	134.05
	1000.00

The saline matter was not weighed, but its solution was alkaline, and effervesced with acids.

Crassamentum.—The proportion of serum to crassamentum was—

Serum - - - - -	40.5
Crassamentum - - -	59.5
	100.0

But the same observation applies to this as to the former determination.

The crassamentum contained 68.55 per cent. of water; it contained also .075 gr. of pure fibrin, equivalent to .26 per cent., the blood weighing 28.937 gr. Hence it consisted of—

Water - - - -	74.93
Albumen and salts - -	11.60
Red globules - - -	13.21
Fibrin - - - -	.26
	100.00

Specimen 4. Lunatic Asylum.—This blood was drawn from the jugular vein of a female patient (ætat. 20), who had rallied from collapse for about a day by artificial excitement, the blueness having disappeared, and the natural warmth having been restored. The blood was obtained six hours after death. It did not coagulate, but the red globules subsided, leaving the serum yellow and pure.

Serum.—Sp. gravity 1.040. 9.940 grammes of it were subjected to analysis, and found to contain—

Water - - - -	866.72
Albumen and salts - -	133.28
	1000.00

The saline matter was found to be about 1.2 per cent., but the experiment was not made with much precision: its solution in water was alkaline, effervesced with acids, and contained both potash and soda.

The blood was found to contain—

Water - - - -	76.07
Albumen and salts - -	11.69
Red globules - - -	12.24
	100.00

There was no fibrin present.

Having thus ascertained the composition of the blood in the severer stages of the complaint, I next proceeded to examine it in the incipient stages.

Two of the first specimens I procured were from the Cholera Hospital, taken from patients affected with diarrhœa and vomiting, but who afterwards recovered. I did not see them myself, and therefore cannot be certain whether they were real cases of cholera or not; the specimens resembled in every respect healthy blood. The sp. gravity of the serum of one was 1.0243, and of that of the other 1.0232. The latter was subjected to anaiysis; it contained—

Water - - - -	919.99
Albumen - - - -	71.62
Salts - - - -	8.39
	1000.00

The serum was to the crassamentum in the ratio of 51.3 and 48.7, and the latter contained 74 per cent. of serum. Hence the blood was composed of—

Water - - - -	80.35
Albumen and salts - -	6.99
Red globules - - -	12.66
	100.00

Specimen 6. Ballymacarrett Hospital.—This was taken from a female (ætat. 45), who had been affected with violent purging and vomiting. The pulse was feeble when the blood was drawn, but she did not fall into collapse. The blood coagulated as usual.

Serum.—Sp. gravity 1.031; very pure. It consisted of—

Water - - - -	891.69
Albumen and salts - -	108.31
	1000.00

Crassamentum.—The fibrin in this case was determined by agitating a separate portion of the blood with a network of iron wire, and was thus readily obtained pure, and found to be .296 per cent. The blood contained—

Water - - - -	77.93
Albumen - - - -	9.43
Red globules - - -	12.34
Fibrin - - - -	.30
	100.00

In three other cases of incipient cholera the serum was found to have the following specific gravities.

Sp. gravity - -	1.027
	1.030
	1.033

The last was from a very well marked case. These experiments on the blood of incipient cases, though less numerous than I should have wished, seem to me to warrant the general conclusion, that the composition of the blood does not differ from the normal state during the early stages of the disease.

In order to show more clearly the changes induced in the blood by cholera, I shall collate the results of my own experiments with those obtained in the analysis of healthy blood.

SERUM.

	Health.	Cholera.	
	Sp. gravity 1.029.	Sp. gravity 1.038.	Sp. gravity 1.045.
Water - - - - - - - -	900.00	874.59	847.02
Albumen - - - - - - -	90.80	116.40	144.36
Chlorides of sodium and potassium - -	6.60	6.69	5.96
Carbonate and phosphate of soda - -	1.65	1.36	1.62
Sulphate of potash - - - - -	.35	.25	.22
Earthy phosphates - - - - -	.60	.71	.82
	1000.00	1000.00	1000.00

The analysis of healthy blood is Dr. Marcet's, which closely agrees with those of Berzelius and Lecanu. A glance at this table is sufficient to show that in the serum of cholera blood, the albumen is in great excess, but that the *salts are both qualitatively and quantitatively the same*, the minute differences in their proportions being less than analysts have found in healthy blood*.

* It may not be uninteresting to observe here, the striking analogy between these conclusions and those of Dr. Marcet; who found in the analysis of dropsical fluids, that however great the variation of albumen, the proportion of salts was invariably the same as in the serum of blood.

BLOOD.

	Cholera.				Incipient Cholera.		Health. Prevost and Dumas.
	1.	2.	3.	4.	5.	6.	
Water - -	78.43	73.11	74.93	76.07	80.35	77.93	78.39
Albumen and salts	10.00	13 21	11.60	11.69	6.99	9.43	8.69
Red globules -	11.06	13.38	13.21	12.24	12.66	12.34	12.92
Fibrin - -	.51	.30	.26	—	—	.30	—

Phil. Mag. October, 1832, p. 296.

On the Graphite of Ceylon.—Several years ago, splendid specimens of graphite were presented to me by one of my pupils, who brought them from the island of Ceylon, where, he informed me, the mineral occurs in masses varying in magnitude from the size of a nut to several inches in diameter, imbedded in gneiss. Mr. J. Prinsep has lately, in the "Gleanings of Science," an interesting periodical published at Calcutta, published the following analysis of one of the varities: Carbon 62.8, iron 5.4, silica 21.0, alumina 9.3, lime 0.2, magnesia 0.1, manganese a trace, and loss 1.2,=100. Suspecting from the large proportion of earthy impurity in this analysis, that some of the matrix had remained mechanically mixed with the graphite, Mr. Prinsep made the following additional analysis: 1. The graphite, uncleaned, left, as above, iron and earth, per cent. 37.2. 2. Roughly cleaned, left a residue per cent. 18.5. 3. Crystals selected with care, 6.0. 4. Another trial left the very small proportion of 1.2. The two last residua did not entirely dissolve in muriatic acid; indeed, the former yielded 0.3 of silica on analysis. This statement is illustrative of the accuracy of Karsten's view of the composition of graphite, namely, that it is a mere modification of carbon, and the iron and earths are accidentally mixed parts. The graphite of the Himala Mountains yielded to Mr. Prinsep the following ingredients: Carbon 71.6, iron 5.0, silica 15.0, alumina, &c. 8.4=100.0. The English graphite was found by Mr. Prinsep to yield, hygrometric moisture 2.7, carbon burnt off with difficulty 53.4, iron taken up by acid 7.9, earthy impurities 36.0=100.0. As this varity was marked of "superior quality," it follows that, chemically considered, it is inferior to the kinds found in Ceylon and the Himalas.

The Ceylon graphite, Mr. Prinsep informs us, has only been known commercially for five or six years; the government had shipped small quantities of it to England by way of trial, and it answered so well, that they were induced to receive it, amongst other articles, in lieu of revenue, at a fixed valuation, when they were suddenly surprised at the quantity of this novel currency offered in payment. A large heap was thus accumulated; and as the island

abounds in this mineral, and there are no padlocks upon the mines, as in Cumberland, it might soon effectually destroy the income of the Borrowdale Company, if introduced largely into the English market. The natives of Ceylon make no use of it.—*Jameson's Journal*, October, 1832, p. 346.

Analysis of Gums, by M. Guérin—M. Guérin has analysed several varieties of gum with the annexed results. Arabin, which constitutes the greater portion of gum arabic, is composed of

Carbon - -	43.81
Oxygen - -	49.85
Hydrogen - -	6.20
Azote - -	14
	100.00

The azote is considered as non-essential.

Gum arabic was found to consist of

Arabin - -	79.40
Water - -	17.60
Ashes - -	3.00
	100.00

Messrs. Gay-Lussac and Thenard found its composition to be:

Arabin - -	84.16
Water - -	13.43
Ashes - -	2.41
	100.00

The difference of water found depended upon the different methods of drying: the gum in this analysis was dried at 212° in the air; while M. Guérin dried it at 257° *in vacuo*, which accounts for the larger quantity of water obtained by him. The quantity of ashes found by M. Guérin is the same as that procured by Vauquelin; they consist of carbonate of potash, chloride of potassium, oxide of iron, alumina, silica, and magnesia.

Gum Senegal.—100 parts of this gum treated with 500 of nitric acid, gave 16.70 parts of mucic and oxalic acids. It is composed of

Arabin - -	81.10
Water - -	16.10
Ashes - -	2.80
	100.00

Its composition is therefore essentially the same as that of gum arabic.

Mucilage of Linseed.—The soluble part of linseed is composed of

Arabin and azotized matter -	67.50
Water - - - -	14.00
Ashes - - - -	18.50
	100.00

Bassora Gum.—This gum swells much in water; treated with boiling alcohol it yields chlorophylle, a substance resembling wax, acetate of potash, chloride of calcium and supermalate of lime. It is composed of

Arabin - -	11.20
Bassorin - -	61.31
Water - -	21.89
Ashes - -	5.60
	100.00

Bassorin is solid, colourless, semi-transparent, insipid, inodorous, uncrystallizable, and difficult to powder. It is insoluble both in hot and cold water, but it absorbs it and swells considerably; it is also insoluble in alcohol, and does not undergo the vinous fermentation. 100 parts treated with 1000 of nitric acid gave 22.61 of mucic and oxalic acids. When treated with sulphuric acid it gives a crystallizable matter, which has a sugary taste, but does not form spirit by fermentation.

Bassorin is prepared by washing Bassora gum with a large quantity of cold water repeatedly, until it ceases to dissolve anything; the residue is then to be allowed to drain, to be dried in cloth, and the water is to be finally separated by exposure to salt-water bath in a silver capsule.—Bassorin is composed of

Carbon - -	37.28
Oxygen - -	55.87
Hydrogen - -	6.85
	100.00

The soluble part of Bassora gum is similar to arabin; 100 parts of water at 68° dissolve 17.28 parts, and at 212°, 22.98 parts; 100 parts heated with 400 of nitric acid, gave 15.42 mucic acid and oxalic acid.

The soluble part, or arabin, of this gum gave by analysis:

Carbon - -	43.46
Oxygen - -	50.28
Hydrogen - -	6.26
	100.00

It is therefore evident that it is identical with arabin.

The insoluble portion of Bassora gum consists of bassorin mixed with phosphate of lime, silica, oxide of iron, and magnesia.

Gum Tragacanth.—Its sp. gr. is 1.384; when heated to be-

tween 125° and 145° Fahr., it is more easily powdered than at common temperature. It swells prodigiously when put into water, and when boiled in water and treated with iodine, starch is shown to be present.

It is composed of

Arabin - - -	53.30
Bassorin and starch -	33.10
Water - - -	11.10
Ashes - - -	2.50
	100.00

Ann. de Chim. et de Phys. xlix. p. 248, *and Phil. Mag.*

*Experiments of M. M. Rayer and Young on the Blood in Cholera.**—MM. Rayer and Young undertook a second series of experiments, in order to determine the alterations that have taken place in the blood in cholera, one of the most prominent characters of which is its little disposition to assume the vermillion colour on exposure to the air.

In order to understand perfectly this remarkable difference, the attention of the authors has been first directed to the blood of persons affected with other diseases in order to determine what are the conditions and circumstances most favourable to the oxygination of this fluid.

After having carefully studied the spontaneous coagulation of non-choleric blood, and the action of air and the serum on the colouring matter, they have tried to ascertain, by experiment, if all the constituent parts of the serum are necessary to the oxygenation of the blood: for this purpose they have put clots of black blood in contact with pure water, with a solution of albumen and with a solution of the diferent salts which exist in the blood.

The result of these experiments is as follow: 1st, The serum of the blood does not prevent the clot which it surrounds from reddening and absorbing oxygen, when the thickness of the layer is but little, but oxygenation does not take place sensibly if this layer is a few inches deep.

2nd. In examining if the serum is necessary for the arterializing of the blood exposed to air, they have observed that a clot, deprived, as much as possible, by blotting paper of its moisture, reddens less strongly than one which is left untouched; that pieces of clot well washed with water do not redden as much as a piece left unaltered; that the projecting portions of a clot become deeper

* The first series of experiments had for their object the disproval of the assertion of Herman, as to the existence of free acetic acid in the blood, which it is not necessary to extract, that having been already done by various writers, as O'Shaughnessy, &c.

coloured by the flowing away of the serum, and by drying in the air, even when the dessication is not very considerable.

3rd. Water does not sensibly redden the clot of blood that is placed in its middle, whatever may be the thickness of the layer of this liquid.

4th. Albumen alone has not the property of favouring the action of air on the blood, but it does not at all prevent it; for a serum made artificially with white of egg, water, and salts, comports itself towards blood, at least as well as the same volume of water and salts alone.

5th. All the alkaline salts of the first section, and the ammoniacal salts dissolved in water, possess, 1st the property of reddening the blood by themselves; and, 2nd, that of permitting the colouring matter to become vermillion, on exposure to the air, across layers of greater or less thickness of the water that holds them in solution.

6th. Among the organic principles sugar and urea possess the same property.

7th. The colouring matter of the blood, reddened by salts, takes a vermillion colour on exposure to the air.

8th. Connecting these last results with the preceding, the authors conclude that the presence of the saline matter in the serum of the blood is an indispensable condition for its oxygenation, and consequently for that the chemical phenomena of respiration should take place.

The authors, passing then to the examination of the choleric blood, consider that they have established the following conclusions:—

1st. The cholera blood scarcely reddens when exposed to air.

2nd. It reddens less in its own serum, than non-cholera blood.

3rd. Its serum reddens a non-cholera clot less than common serum.

4th. The salts enliven its colour very much.

5th. It preserves the property of being reddened, by salts, longer than non-cholera blood.

6th. It contains, as has been before proved by chemists, less serum and salts than the non-choleric blood.

In an extensive series of experiments the authors endeavoured to determine whether the choleric blood possessed any poisonous principle, and if injected into the veins, stomach, peritoneum, &c., of rabbits it produced any particular train of symptoms or any organic lesion. No other effect resulted than the mere mechanical injury arising from the tenacity of the injected liquid.—*Journal de Chimie Medicale, Sept.* 1832.

Analysis of the Blood in Cholera, by M. Lassaigne.—This celebrated chemist has analysed the blood of two cholera patients, sent to him by Magendie. It had been collected a short time previous to death: they were marked Nos. 1 and 2. The blood No. 1, was liquid, without any apparent gelatinization, and containing

but a very small fibrinous clot, identical with the clot of ordinary blood; its red brown colour was analogous to that which venous blood assumes when exposed to the contact of carbonic acid. The blood No. 2, was of the consistence of currant jelly, diffused uniformly in a deep red brown serum; it presented a great number of small lumps of clot which had preserved the form of the vessels in which it had been collected.

The general results are:—

1st. That the blood in cholera is alkaline, as common blood, and that its serum, independent of the colouring matter it holds in solution, acts with all reagents as the serum of ordinary blood.

2nd. That the most liquid blood contained 79 per cent. of water, that is very nearly the same proportion of water as in perfect health.

3rd. that the quantity of fibrine is much diminished; he has been able to obtain only the $\frac{1}{7}$ of the natural quantity.

4th. The blood No. 1 contained 68 per cent. of water, that is, 10 per cent. less than ordinary blood.

M. Lassaigne concludes, from his experiments, that the blood in cholera possesses the same alkaline properties as in health, but that it contains much less water, to which cause its spissitude is owing, and very little fibrine.—*Journal de Chimie Medicale*, 1832, *Aout*. 458.

Preparation of Proto-Carbonate of Iron.—According to Molden-haure, the following process gives a proto-carbonate of iron of fine quality. A solution of pure proto-sulphate of iron is mixed with a solution of carbonate of ammonia, until no more precipitate is produced, and the bottle is to be then filled to the throat with boiling distilled water. When the precipitate is well settled, the liquor is decanted, and the residue washed many times with distilled water, and placed then in a strong cloth, moistened with ether, in order to prevent any developement of heat, which might favour peroxidation. The mass is then to be immediately submitted to the action of the press, and the desiccation finished in vacuo. The powder thus obtained is greenish white.

M. Folix gives another mode, which may be more applicable on the large scale. He dissolves in pure water seven parts of proto-sulphate of iron, and boils this solution for some time with filings of iron, to separate all peroxide: it is to be then filtered in a covered funnel, and four parts of pure carbonate of potash, dissolved in boiling water, added. The whole bottle is to be then filled with boiling water and closed. When the greyish white precipitate has deposited, he decants, and pours on fresh boiling water, closes the bottle; and when the precipitate has again subsided, decants, and adds fresh water; this is done until the water comes off tasteless; the powder is then washed with alcohol, and having been made into a thin cream, introduced into a small retort, to which is adapted a stout bottle; having gotten rid of as much as possible of the atmospheric air of the aparatus,

the alcohol is to be all distilled over by a moderate heat. The protocarbonate thus obtained is of a brownish green colour, insipid, soluble in the acids, particularly in hydrochloric acid, with violent effervescence. Thirty grains of this product contain 9 grains of carbonic acid. Exposed to the air, it yet retains its colour for a long time.—*Jour. Med. Août.*

Preparation of Kermes.—M. Bizzio recommends three parts of pure carbonate of potash to be taken, to be boiled for half an hour, with an equal weight of hydrate of lime, and a sufficient quantity of water, observing that the liquor should be then reduced to a tenth part of the water employed.

Seven-eighths of the filtered liquor are to be taken. The eighth is to be put aside. The seven parts of this caustic ley are to be diluted with a quantity of water equal to six times the weight of the carbonate of potash employed; when the liquor begins to boil, one part of sulphuret of antimony in very fine powder is to be added, and at the end of twenty minutes' ebullition the liquor filtered. By cooling nothing is deposited; acetic acid is to be added in different portions, constantly stirring the liquor. The precipitate first formed re-dissolves in the liquor, but according as the acid neutralizes the alkali the precipitate becomes more and more abundant. The kermes obtained by this first operation is in the state of yellowish-brown hydrate; the portion of the potash ley set aside is to be now added, and the whole well agitated. At the end of twelve hours the kermes begins to assume its usual beautiful colour; it is to be then filtered, well washed, and dried.—*Journal de Chim. Med.* Août, 1832.

On the Red Oxide, and on the Hydrate of Phosphorus, by M. Pelouze.—It has been long known that phosphorus leaves, when burned in air, a red insoluble residue more or less abundant, according to circumstances; this matter, as well as the white substance that covers phosphorus, when long immersed in water, had not been particularly examined. The red matter was generally supposed to be an oxide of phosphorus, and the white matter a hydrate of this oxide; but M. Pelouze has, by an interesting train of research, proved the composition of the red oxide, and that the white matter is a hydrate not of the oxide, but of phosphorus itself, similar to the hydrate of chlorine discovered by Faraday.

The properties of the oxide, prepared by the mode given by Berzelius (Traité de Chimie) are as follow:—

It is red, inodorous, tasteless, heavier than water, insoluble in water, either alcohol or the fixed or essential oils; it is not luminous in the dark, even when rubbed strongly between two rough bodies.

When heated in the air, it does not inflame until it approaches a dull-red; at the heat of boiling mercury, it does not take fire; at a red heat it burns, and is totally converted into phosphoric acid;

when heated in close vessels it is converted into phophorus and phosphoric acid.

Nitric and nitrous acids inflame it. M. Pelouze attributes this property to the great state of division in which the oxide exists: it burns in chlorine, forming perchloride of phosphorus and phosphoric acid; it detonates strongly with chlorate of potash; sulphur does not act on it until it melts, and then decomposes it without explosion.

The match-boxes, which consist in phosphorus mixed with a little of this oxide, were supposed to owe their early inflammability to the presence of this oxide; but as the oxide is much less inflammable than phosphorus itself, it cannot act in the way it is generally supposed. M. Pelouze considers that it acts by dividing the phosphorus very much; and he has accordingly found, that other substances not combustible, as silica, render phosphorus much more combustible by promoting its mechanical division. By various analysis the composition of this oxide appears to be 85.5, phosphorus + 14.5, oxygen. Numbers, which represent the formula, $Ph^3 + O$, taking 196.142 as the atomic weight of phosphorus, or $Ph^3 + O^2$ in using 392.285.

Hydrate of Phosphorus.—This matter is white, tasteless, insoluble in water; it has the same odour as phosphorus, and it is luminous in the dark.—Sp. gr. = 1.515.

At 45° cent. it is decomposed into phosphorus and water; by this property it was found to consist of 100 phosphorus + 14.33 water, or 4 atoms of phosphorus + 1 atom of water $(Ph^3) + (H^2 O)$ taking 392.285 as the atomic weight of phosphorus.—*Annales de Chimie et de Physique*, Mai, 1832.

The New Vacuum Sugar.—The grains of this beautiful sugar are true and well formed crystals. They do not melt so readily as common sugar, a circumstance that induces some inaccurate observers to imagine that this sugar is not so sweet as common muscovada. The taste is just that of fine *candy*. The advantage is, that this sugar is far less hygrometric than common raw sugar, and suffers less from a moist atmosphere. The apparatus used in its preparation is a modification of the late Mr. Howard's apparatus for boiling sugar *in vacuo*, with strainers of copper-plates pierced with minute holes, or several folds of wire-gauze for clarifying the syrup. The process is, immediately on crushing the canes, to heat, lime, and scum the juice, which, while warm, is forced through the strainer, from which it runs into the boilers. These are provided with air-tight covers, the tops of which are connected by tubes with a large air-pump, wrought by a steam engine. The steam, as generated, is thus drawn off, and the boiling is carried on at a temperature far below the boiling point of sugar. When sufficiently concentrated, the syrup is crystallized, and, when consolidated, it is carried to the curing house, the temperature of which is kept up by steam pipes running into it. This process saves much sugar, for the heating being low, little or no

Water - - - -	76.07
Albumen and salts - -	11.69
Red globules - - -	12.24
	100.00

There was no fibrin present.

Having thus ascertained the composition of the blood in the severer stages of the complaint, I next proceeded to examine it in the incipient stages.

Two of the first specimens I procured were from the Cholera Hospital, taken from patients affected with diarrhœa and vomiting, but who afterwards recovered. I did not see them myself, and therefore cannot be certain whether they were real cases of cholera or not; the specimens resembled in every respect healthy blood. The sp. gravity of the serum of one was 1.0243, and of that of the other 1.0232. The latter was subjected to analysis; it contained—

Water - - - -	919.99
Albumen - - - -	71.62
Salts - - - -	8.39
	1000.00

The serum was to the crassamentum in the ratio of 51.3 and 48.7, and the latter contained 74 per cent. of serum. Hence the blood was composed of—

Water - - - -	80.35
Albumen and salts - -	6.99
Red globules - - -	12.66
	100.00

Specimen 6. Ballymacarrett Hospital.—This was taken from a female (ætat. 45), who had been affected with violent purging and vomiting. The pulse was feeble when the blood was drawn, but she did not fall into collapse. The blood coagulated as usual.

Serum.—Sp. gravity 1.031; very pure. It consisted of—

Water - - - -	891.69
Albumen and salts - -	108.31
	1000.00

Crassamentum.—The fibrin in this case was determined by agitating a separate portion of the blood with a network of iron wire, and was thus readily obtained pure, and found to be .296 per cent. The blood contained—

Water - - - -	77.93
Albumen - - - -	9.43
Red globules - - -	12.34
Fibrin - - - -	.30
	100.00

In three other cases of incipient cholera the serum was found to have the following specific gravities.

Sp. gravity - -	1.027
	1.030
	1.033

The last was from a very well marked case. These experiments on the blood of incipient cases, though less numerous than I should have wished, seem to me to warrant the general conclusion, that the composition of the blood does not differ from the normal state during the early stages of the disease.

In order to show more clearly the changes induced in the blood by cholera, I shall collate the results of my own experiments with those obtained in the analysis of healthy blood.

SERUM.

	Health.	Cholera.	
	Sp. gravity 1.029.	Sp. gravity 1.038.	Sp. gravity 1.045.
Water - - - - - - - -	900.00	874.59	847.02
Albumen - - - - - -	90.80	116.40	144.36
Chlorides of sodium and potassium - -	6.60	6.69	5.96
Carbonate and phosphate of soda - -	1.65	1.36	1.62
Sulphate of potash - - - - -	.35	.25	.22
Earthy phosphates - - - - -	.60	.71	.82
	1000.00	1000.00	1000.00

The analysis of healthy blood is Dr. Marcet's, which closely agrees with those of Berzelius and Lecanu. A glance at this table is sufficient to show that in the serum of cholera blood, the albumen is in great excess, but that the *salts are both qualitatively and quantitatively the same*, the minute differences in their proportions being less than analysts have found in healthy blood*.

* It may not be uninteresting to observe here, the striking analogy between these conclusions and those of Dr. Marcet; who found in the analysis of dropsical fluids, that however great the variation of albumen, the proportion of salts was invariably the same as in the serum of blood.

nite of the Orinoco; but he observes that his knowledge of the mining countries of South America is not sufficient to enable him to state their general geological connexions.

With reference to the second question, the probable association of metallic veins with unstratified rocks, though the latter are not visible in the immediate neighbourhood of the former; the author gives a section of the country between Valorsine and Servoz, and points out the probable extension of the granite of Valorsine under the Aiguelles Rouges and Breven, composed of protogine, chlorite, and talcose schists, to the immediate vicinity of the mines of Servoz, which are situated in the latter formation. He also refers the reader for further illustration to the metallic deposits of Wanlockhead and the Leadhills; to the mines of Huelgoet and Poullavaen in Brittany; to those of Macagnaga and Allayna at the foot of Mount Rosa, of Cardinia, Corsica, and Elba; to the metalliferous veins of the Vosges, Brescina in the Alps, and the Altai chain; all of which occur in districts where unstratified rocks are known to exist.

The author, however, states that besides the evidence thus afforded of the connexion of igneous rocks with metalliferous deposits, it is necessary to have a knowledge of the stratification of the formations in which mines are worked before any legitimate conclusion can be drawn.

In reply to the third question, do there exist metalliferous deposits entirely disconnected with unstratified rocks? The author enumerates the mines of the Netherlands; those of quicksilver at Idria; the lead mines of Poggau in the valley of the Mur; Pesay and Macot in the Tarentaise; and the veins of galena in the mountain-limestone of the south-west of England.

The author then gives, as a general illustration of his subject, a sketch of the countries between the Alps and the western extremity of England, and shows that igneous rocks and metallic deposits are totally wanting in the whole of the districts extending from the foot of the Alps across the valley of Lac Leman, the Jura chain, the plains of Franche Comte and Burgundy; and in the oolitic, green-sand, chalk and tertiary formations of the north-west of France, and in the tertiary and secondary formations of England as far as Devonshire; but that, on the contrary, as soon as the unstratified rocks recommence in the last-mentioned district, metallic veins re-appear.

Lastly, the author compares the relative connexion of igneous deposits with metallic accumulations, and states that ores are more abundant in granite, certain porphyries, syenites, amygdaloids, and trap, which he calls underlying, unstratified rocks, than in the newer porphyries, the dolorites, and the true volcanic formations, which he distinguishes by the term of overlying, unstratified rocks; and he alludes to the assistance which the practical miner would derive from attending to this distinction, and to the principal object of the paper, the connection of igneous with metalliferous deposits.—*Phil. Mag.*, September, 1832, p. 225.

Notice of a New Variety in the Human Race, by M. Dureau de Lamalle.—It will, doubtless, appear singular, that in the present state of zoology, a distinct variety in the white or Caucasian race should have escaped the attention of naturalists. Of this fact, however, ancient and modern Egypt furnish abundant proofs.

Winkelman had perceived, that on the heads of Egyptian statues the ear was placed higher than in Greek statues; he attributed this singularity to a caprice of Egyptian art, which had pushed up the ear of their kings, as all the Greek artists have exaggerated the perpendicularity of the facial angle in the heads of their divinities.

When M. D. de L. visited, in May, 1830, the museum of Turin, so rich in Egyptian monuments since the acquisition of the Drovetic collection, this character of the position of the ear constantly struck him. It existed in all the statues of Pht, of Meris, of Osymandyas, of Rhamses, and of Sesostris, which evidently belong to the Arabo-or Egypto-caucasian race.

As it happened, that at that time more than forty mummies were being unrolled, he had an opportunity of seeing whether this character of the height of the auricular hole existed in the embalmed heads of the inhabitants, and whether the Egyptian artists had, in their productions, exactly copied or disfigured nature. He was astonished to find, that on thirty heads of mummies, whose facial angle was equal to that of the European race, the auricular foramen, which, drawing a horizontal line, is placed in us on a level with the inferior part of the nose, was placed in these Egyptian skulls on a level with the middle of the eye. The head in the temporal regions is always much more depressed than in our variety, which arises probably from the greater elevation of the auricular hole.

This elevation in the skulls of the mummies was equal to one and a half inch.

At first M. D. de L. considered that this remarkable variety of the human race had disappeared from the earth during the twenty or twenty-four centuries which have elapsed since the time when the Egyptians, whose heads had been examined, were placed in the tombs of Thebes, and the present time, but he has latterly had opportunities of meeting with numerous instances of this formation in the living people of Upper Egypt; and amongst others, a Copt of Upper Egypt, named Bootor, who resided in Paris as a teacher of Arabic, possessed this conformation in a most decided manner.

M. Dureau de Lamalle concludes his memoir on the relation of this new, with the other varieties of the Caucasian race, and remarks the peculiar influence which the flattening of the skull in the temporal regions would have on the configuration of the brain, and the mental faculties.—*Annales des Science Naturelles*, Avril, 1832.

PATHOLOGY AND THERAPEUTICS.

Case of Aphonia, treated by Nitras Argenti.—A young woman had gradually lost her voice, from repeated attacks of catarrh; her general health was quite good. During deglutition, she experienced an uneasiness in the larynx. When she did not make any strong effort to speak out, her voice resembled a low whisper; but if animated, and anxious to exert her speech, a noise, like a succession of shrill whistles, or the mewings of a kitten, was produced. M. Trousseau treated the case by the local application of a strong solution of lunar caustic, introduced by means of a sponge affixed to a bougie, and gently pressed over the opening of the larynx. The operation was followed by retchings, vomiting, and a cough which nothing could allay. These distressing symptoms abated in about a quarter of an hour, and then the patient assured M. T. that she felt little pain when the caustic was applied; and she expressed her astonishment that already her voice was much stronger, and that she could speak louder than she had been able to do for eight months. She was ordered to gargle her mouth and throat with a solution of alum. The retching and vomiting occurred at intervals till the following day, and the pain of the operation continued for a day or two longer. The patient was, however, able to drink, and to swallow soup, &c. What is strange is, that although, almost immediately after the application of the caustic, the voice was so much improved, at the end of 10 days the aphonia was as bad as ever. The remedy was re-applied, but in a still stronger form. A sponge, dipped in a saturated solution of the caustic, was introduced as far as the larynx, and about 10 drops allowed to distil into it. Immediately a violent convulsive cough arose, by which most of it was expelled in the Doctor's face! The pharynx, tongue, and lining membrane of the cheeks were rendered as white as milk. Vomiting and a severe cough came; fortunately there was but little pain, no fever or constitutional disturbance. Her voice did not receive the speedy amendment, as after the first operation. The cough was very troublesome for 12 days; but the voice appeared to have obtained strength, although it was very hoarse. After the 13th day, she was able to speak for some minutes in succession, and the aphonia never afterwards returned. The voice, at first hoarse and occasionally squeaking, became more and more clear; however, after a long walk, or exposure to cold, or too much talking, the hoarseness still returns, but not the aphonia.—*Journ. Univers. et Hebdom. Johnston's Journal, Oct.*

On an Epidemic Miliary Sweating Fever, which raged in the Department of the Oise.—The following is the account detailed by Dr. Menière.

"On the 9th of May, the Minister of Commerce and of Public Works was informed by the authorities of the department of the

Oise, that a number of the districts were afflicted with an epidemic disease; and they requested that physicians might be sent to investigate its nature. The intelligence and petition were transmitted the same day to the Dean of the Faculty of Medicine. On the 10th Drs. Orfila, Pinel-Granchamp, Hourmann, and Menière set out for Beauvais, where the physicians and magistrates gave the requisite information. The disease proved to be the Miliary, or Picardy sweating fever, which has been observed in these localities several times before, and remarkably so in 1821. It broke out in the last week of April, or first of May, and was very mild, as, out of 84 patients, none had hitherto died. Its progress was noticed to be much arrested by cold weather. In some places its invasions was quite sudden after a storm, during which the thermometer rose considerably; and more than one-half of the inhabitants of a village were seized in one night. Females were more disposed to it than males. The disease commences with headach, sweating, and dispnœa; the skin then becomes red and very hot, and there is a most troublesome pricking sensation in the surface. No local pain; pulse full and soft. The dispnœa appears to depend on the congestion of blood in the lungs and heart, and not on any weakness of the exterior respiratory organs: the plethora of the heart and large vessels is indicated by the ventricular pulsations being diffused, heavy, and slow, with little sound on auscultation. There is a distressing feeling of a choking weight in the præcordial region, and sometimes also in the epigastrium; the pulsations of the cæliac artery are so strong, as to heave up the abdominal parietes, and cause most obstinate gastralgia. The sweating is often prodigiously great, patients being obliged to change their shirts 20 or 30 times in the course of the night, and this 'flux' continuing to the like extent for two or three days. Its odour was that of rotten straw, or of a weak solution of chlorine, or of the evacuations of the cholera morbus. The watery halitus from the skin is kept rarefied by the bed-clothes; when these are removed it is condensed, and forms a thick cloud, which speedily resolves itself into a sort of rain. The bowels are usually constipated, and the urine is scanty. The sweating lasts sometimes for four, five and six days, and it ceases gradually without the substitution of any other critical evacuation, or the occurrence of other symptoms; but in the majority of cases, a vesicular eruption on the chest, neck, back, and successively over all the body, appears on the second, third, or fourth day. It varies exceedingly in different patients: the vesicles are usually of the size of millet seeds—here and there a few larger ones are scattered. In the early stage the rash appears papular; when it dies away, the part is found covered with furfuraceous scales. The average duration of the fever, from its onset to the recovery of the patient, is from 8 to 14 days. The symptoms demanding most attention are those of congestion in the head and chest, threatening, in the one case, delirium and apoplexy—in the other, hæmoptysis and fatal dyspnœa.

The miliary epidemic of this year differs, in several important

respects, from former eruptions of this disease; and it seems to have received a certain stamp from its more formidable brother, the cholera morbus, which exists at the same time in the same villages and districts. In the stead of the thoracic and cerebral symptoms, diarrhœa vomiting, and gastro-enteritic irritation have frequently taken their place, and have carried off many of those affected with them. At Noailles, the chief feature of the epidemic was congestion of the lungs, causing death sometimes in the space of a few hours. There was no obvious difference in topography of these two places to explain this diversity of character. In 1821, the disease raged severely in Cauvigney; there were 23 deaths, most of which were caused by the slow developement of the gastro-enteritic disease: in the present epidemic, death takes place at the very onset of the disease, or at the time of this miliary eruption, the patients suffering dreadful anxiety and distress at the præcordial region—racking pains and spasmodic stiffness of the back: sometimes they vomit, or rather hawk up, much frothy blood. At Chateau Rouge, many cases of what the French denominate 'la suette exquise,' that is, the sweating fever without any miliary eruption, were seen. In several patients, who were in a state of convalescence from the epidemic, symptoms of typhoid fever, such as stupor, emaciation, red patches on the belly, pulse frequent and soft, tongue red, and rough in the middle and towards the base, breath fetid, &c. supervened. From comparing the reports from 24 different districts in Picardy, it appears that, in the space of two or three days, not fewer than 5000 persons were seized with this epidemic disease. Many opinions have been offered to account for the frequent appearance of the miliary sweating fever in ancient Picardy; the miasmata of marshes and bad nourishment have been chiefly insisted upon, but we think incorrectly, as most of the patients were living in healthy dry localities, well housed, fed, and clothed, and frequently in affluence and ease. With regard to the occasional or exciting cause, there is little discrepancy of opinion: the elevation of temperature, and an electrical state of the atmosphere, have generally preceded the appearance of the malady. The miliary epidemic is fully as capricious in its course and career as the cholera; places being spared in the very line of its advance. It is certainly not contagious, as announced by the older authors.

Treatment.—Formerly, when the disease was considered to proceed from a leaven, or poison, contaminating the blood, the efforts of the physician were directed to favour the expulsion of the peccant matter by sudorifics, cordials, warm ptisans, and heavy bedclothes. Boyer, Tessier and others about the year 1773, introduced quite an opposite plan of cure. Venesection at the onset of the malady, mild tepid drinks, small doses of hypnotic medicines, and the very gentlest revulsive applications to the feet and hands, such as bathing them with mustard water, are most proper; in short, whatever encourages the breaking out of the rash, which generally is accompanied with relief. Mild aperients are always useful. When symptoms of con-

gestion in the lungs or head occur, more active depletion and counter irritation must be immediately adopted. We must be on our guard however not to lower our patient too much, as there is a strong tendency in this disease to nervous collapse. Whenever the eruption appears, the treatment ought to be limited to the mere regulation of the diet, &c. Many patients who have been bled at this period for dyspnœa, have rapidly sunk. The greatest care is necessary during the convalescence to prevent a relapse; every excitant, or irregularity must be studiously avoided.—*Archives Générales de Médecine. Johnston's Journal.*

Case of Bite from the Karrait Snake.—This case was communicated by Brigadier Wilson, who watched and treated it with much care and some dexterity. As the narrative is brief and very interesting we shall use the narrator's own words. The details exemplify well the action of an animal poison extremely virulent, yet not sufficiently intense to destroy a man.

"June 10th, 1829.—Reached home from the lines of the 12th Regt. at about five minutes past 10, p. m. The bearers were carrying away the empty palkee, when one of them who had taken off his shoes trod on a Karrait snake, which bit him just above the great toe of the right foot. On the man's calling out that a snake had bitten him, I took up a candle and a stick, and went out and killed the snake; it was, I think, a full grown Karrait, though I have seen larger ones; it was about two feet three inches in length, and was much more active than those I have generally seen. As the snake was within thirty yards of the house, it did not take me three minutes to kill him. The man who was bitten did not seem very much alarmed at first, but in less than five minutes he was very much so; he became quite insensible in less than ten minutes after he was bitten; he sunk down, was unable to move, and appeared like a man quite drunk, except that he made little noise; his pulse was rather faint and irregular, and he breathed hard. I should have said, that as soon as he was brought to the house, which was in ten minutes after he was bitten, I gave him a tea-spoonful (about sixty drops) of Eau-de-luce, in a glass of water; he easily drank it, and I also rubbed some of the same on the bite. I continued to apply hartshorn, till about half-past 11, or quarter to 12. I had nearly emptied my Eau-de-luce bottle in the morning on another man, my surwan, and had to send the sudder for more, upwards of a mile off, on a dark night; and I feared the man might die for want of medicine: I therefore gave him about two tea-spoonsful of hartshorn, of which I had plenty. I think that the hartshorn did as much good as the Eau-de-luce. The man had no difficulty in swallowing, and was perfectly in his senses at 11 o'clock, though he complained of great pain in his foot, and seemed very uneasy. At half-past 11 the part about the wound was very raw, all the skin having come

off, (from rubbing, I suppose;) he could sit up and complained much; the leg was quite cold, and mottled black here and there, some way above the ankle: he was very sleepy; his pulse was regular, but rather slow, and weak. About midnight, I had his foot put in water, as warm as he could bear it; and hot towels were put on his leg, which was well rubbed for two hours. I also gave him about 12 grains of opium, dissolved in Eau-de-luce, and put into a glass of brandy to rub to the part. The man was pretty easy at 2 o'clock, and at 3, I allowed him to go to sleep, which he seemed much to require. The thin blood continued running from the wounds, particularly those caused by the snake's two upper teeth, which seemed to have done all the mischief; they were much larger than the others. Up to 3 o'clock there was no symptom of swelling in any part of the foot or leg; which continued quite cold, and mottled with black. The man, a stout young Cahar, was much better the next morning, at 8 o'clock, when he got up; but his leg was terribly swollen up to the hip; there was pain all the way up, but not very severe; blood (very thin) ran out of his nose and foot all day, and a great many blisters arose below the knee and all over the foot: as these grew worse, and burst, they turned into bad sores. I had two poultices put on every day, and the pain and swelling came gradually down in about three weeks: the sore is now nearly well; all the blister sores, except one above the fourth toe, are healed. I gave the man plenty of meat (flesh), and a glass of brandy and water, under the name of physic every day. Perhaps the effects of the bite would have been less sudden, had not the man's blood been in rapid circulation at the moment he was bitten by the snake. He must have been heated, as I had come upwards of a mile in my palanquin, and he was under the pole when I arrived at home. It is now upwards of a month since the above circumstance took place, and I state from recollection the steps that I took to cure the sufferer. Dr. Eckford, of the 12th Reg. was so good as to tell me how to treat the man subsequent to the bathing of his leg in hot water, at 12 o'clock on the night of the accident."—*Johnston's Journal*, p. 525.

Fatal Case of Constipation.—John Clements, æt. 35, admitted Nov. 23, 1831, under the care of Dr. Seymour.

Ten days previously he had been attacked with severe colicky pain in the right colic region, for which he was leeched, and we believe bled. A day or two after that he had a motion, since which he has had none. He stated that previously to the attack of pain he had passed motions of the natural calibre, and that his bowels had not been unusually constipated.

On admission, the belly was enormously distended, hard, tympanitic, tender to the touch, particularly in the umbilical and cæcal regions. He felt great inconvenience and uneasiness—passed no flatus per anum—had stercoraceous vomiting. Features pinched—

tongue thickly coated—pulse 110, rather feeble. The treatment adopted may be set down in the following series: bleeding, calomel and warm water injections—croton oil and enemata of castor oil—one oz. of quicksilver, afterwards repeated with enemata—assafœtida with turpentine enemata, wine, arrow-root, and beef tea—injections and a blister to the belly. All this was accomplished by dint of indefatigable exertions on the parts of physician, apothecary, and house-surgeon, in the short space of time that intervened between the 23d, when the patient entered the hospital, and the 27th when he died. At one time, under the assafœtida and turpentine administration, the halo of nasty effluvia round the bed, from the combined effects of these not inodorous substances and the stercoraceous vomit, was such as can be more easily imagined than described.

On examining the body the convolutions of the small intestines were found almost inextricably intertwined and bound together by coagulable lymph. The stomach was contracted, the small intestines distended with air, the cæcum of great size, the transverse and descending arches of the colon contracted and empty.

The cæcum, we have said, was of great size, dark coloured, thin, bursting under the slightest touches of the house-surgeon who examined it, generally adherent to the abdominal parietes. Its mucous membrane was in part destroyed, and there was much extravasation of blood between its coats. The ileo-cæcal valve was large and tumid. The cæcum was filled with apparently a mixture of fluid fæces and the injections which had been thrown up. In the small intestines were some solid fæces. The peritoneal inflammation seemed to be chiefly of some day's standing. If a stricture existed in the twisted small intestines it was not made out. It was reported that the patient had previously had an attack of peritoneal inflammation.

Sundry conjectures were hazarded on the actual cause of the constipation. The facts are more valuable than were the theories.—*Johnston's Journal*, p. 530.

Epilepsy connected with Scrofulous Disease of the Cerebellum.—R. S., aged 36, was carried to the Hotel Dieu on the 7th October, 1831, while under an epileptic fit: he had been subject to such attacks for a long time, and they returned usually every month. When he coughed, a sharp pain was felt at the back part of the head. There was a swelling at the lower part of the dorsal region, caused by the projection of the lowest dorsal and upper lumbar vertebræ; this had existed for six or seven years. This patient had a great reluctance or an inability to stand for any length of time, or move forward; yet he could walk if he chose to compel himself. He died very suddenly, and the dissection revealed the following appearances. The swelling on the back arose from the bunching out of the spinous processes of the vertebræ; the bodies of which were softened and wasted; the dura mater of the medulla at the part was diseased, and the canal filled with purulent matter. In the upper lobe of the left lung, was

found a tuberculous mass, passing into a chalky state; and quite at the summit of this lobe there was an empty pouch or cavity, lined by an apparently serous membrane.

The substance of the cerebrum was much firmer than usual, as if it had been steeped in an astringent fluid. The lateral ventricles were enormously distended by a lemon-coloured serum, amounting to 4 or 5 oz. in quantity. The cerebellum was also much firmer in consistence, and on dividing it vertically, a tuberculous mass in the state of infiltration into the medullary tissue and about an inch in extent, was found to rest on the posterior wall of the 4th ventricle, which had thus been considerably contracted in size.

Reflection.—It is well known that many physiologists have placed the seat of physical love in the median, or central part of the cerebellum; now this was exactly the part which was found diseased in the present case; and yet the man retained all sexual desires; which were neither increased, impaired, or perverted.

The opinion of M. Magendie that the median lobe of the cerebellum is, as it were, the regulator of the voluntary movements of the body may be supposed to be neither confirmed, nor confuted by the particulars observed in this patient, in consequence of the co-existence of spinal disease.

An interesting case, however, of tubercular disease in the median part of the cerebellum, without any complication, is detailed in the Bulletin de la Société Anatomique. A soldier, aged 20, suffered from excruciating head-aches, general weakness, tottering of the limbs, and great reluctance to be moved; he voided his urine and faeces in bed; but whether this proceeded from a paralysis of the sphincters, or from sheer unwillingness to be disturbed in bed, could not be ascertained; appetite considerable; mental faculties impaired. On dissection, the lateral ventricles were found distended with water; and on the upper part of the cerebellum close to its median line, a tubercular deposit of a yellowish colour, about three inches in circumference, was observed. The substance of the cerebellum was in a state of ramollisement for the space of two lines round the tumour, with which however it was not incorporated. This case, therefore, corroborates the opinion that cerebellar disease generally causes a great diminution in the muscular powers of the lower extremities.

Another reflection arising from the study of the case which we have related is, in what manner are we to explain the periodicity of the epileptic seizures? they occurred in the present instance usually once every month. Are we to regard the tuberculous disease of the cerebellum as the "fons mali"? Our answer will probably be in the negative, and the reason we assign is, that the morbid structure could not be changed in its form or extent, at stated intervals. Perhaps, therefore, we should take into our consideration the action of the cephalo-spinal fluid, to which Magendie has drawn the attention of medical men. The lateral ventricles being much distended with

water; and the diseased mass compressing the fourth ventricle, and consequently obstructing the opening of communication, discovered by M. Magendie, between the fourth ventricle, and the sub-arachnoid cellular tissue of the medulla, all the effused fluid was necessarily collected in the cerebral ventricles, and to such an extent at certain intervals as to overcome the pathological reaction of the brain, and thus to induce the irregular movements of epileptic convulsions.—*Journ. Hebdom. Johnston's Journal.*

Regeneration of the Vitreous Humour.—A serjeant in the Garde Royale received an injury on the left eye which burst the globe and expelled the crystalline, vitreous, and aqueous humours. The palpebræ were ecchymosed; the conjunctiva red and bloated; and the lower part of the cornea was separated from its attachment to the sclerotic by an irregular cut, through which a portion of the iris protruded. The parts were washed, the iris carefully returned, the edges of the cornea approximated, the eyelids closed, and blood was drawn from the temporal artery. Ice to the head, sinapisms to the feet, constant darkness, and a rigorous diet, were enjoined. During the night he was bled again, and next day cupping-glasses were applied between the shoulders. It was supposed that vision would be for ever lost, but *à notre très-grande et agréable surprise* the globe gradually refilled; on the 22d day the cornea began to assume a healing aspect, and in about six weeks it was perfectly cicatrized. The natural form, and almost the ordinary volume of the organ, were restored, and by the aid of a very convex glass, this soldier came to see objects distinctly, and continues to discharge all the duties of his office.—*Larrey's Clinique Chirurgicale.—Glasgow Journal*, Feb. 1832.

Emphysema of the Lungs.—The patient, whose dissection is appended, was a stationer in Tottenham-court-road, who had laboured for twenty years and more under what is usually termed asthma. He did not come under the observation of Dr. Johnson till within a few months of his death, when he was dropsical, in trunk, abdomen, and extremities. The breathing was so laborious that he could not lie down at all, and he was harassed with constant cough. On examination heart was found to be greatly enlarged. It was difficult to say what was the actual condition of the lungs. By some brisk doses of elaterium, with extract of colocynth and pilula hydrargyri, the dropsical swellings disappeared, the breathing became free, and he was able to go out to Hampstead and other places daily for air. But the state of the heart continued the same. After many fluctuations, the dropsical effusions returned, the medicines lost their power, and he died in a slow and gradual manner, leaving an express wish that his body should be examined by Mr. Thomas and Dr. Johnson.

Upper extremities and upper part of trunk attenuated, subcutaneous cellular membrane of lower part of trunk and of lower extremities anasarcous.

Thorax. On removing the sternum and cartilages of the ribs the right lung appeared extremely prominent, and did not collapse in the slightest degree. The left lung, though not so distended as the right, shewed no tendency to collapse when the chest was opened. On examination the lungs presented a very extraordinary specimen of emphysema, which was much more developed in the right than in the left. The whole lung was of great dimensions, nodulated, as it were, and irregular, but light and in many parts elastic. The emphysematous appearance was chiefly noticed at the free margins of the lobes, which were rounded off, turgid, and globular in shape, from the extravasation of air into the cellular texture of the organ. The appearance presented was not a mere string of air vesicles, which are not unfrequently met with in the examination of dead bodies, but a continuous emphysema of extent and magnitude. Attached to the lower lobe was a sort of distinct cyst, much larger than an egg, perfectly pellucid, and containing air. The wall of the cyst appeared to be formed of the pulmonary pleura. The whole substance of the lung was evidently more or less emphysematous, except in parts where induration was felt, occasioned probably by hepatization. The left lung presented similar appearances, but in a less marked degree. There was some serous fluid in the right side of the chest. As the lung was removed by Mr. Thomas, in order that it might be preserved in the Museum of the College of Surgeons, no section of it was made, for the purpose of examining its structure more minutely.

The heart was much enlarged. The right auricle was dilated and somewhat hypertrophied, the right ventricle dilated, without much hypertrophy, the ostium venosum of large dimensions. The left auricle was dilated, the left ventricle dilated and hypertrophied. The semilunar valves of the aorta presented some ossification at their attached margins, but the alteration was not such as to prevent them from executing their proper functions. Perhaps they might have offered some little obstruction to the exit of the blood from the ventricle. The aorta was generally flabby, and somewhat dilated.

Abdomen. The liver was large, hard, dark-coloured; it descended low in the abdomen, and presented a very decided margin. No other appearance of consequence presented itself.

Cranium. Not examined.—*Johnson's Journal*, October, 1832, p. 453.

SURGERY.

Dr. Macfarlane *on Lumbar Abscess.*—Dr. Macfarlane remarks that lumbar abscess has become a more manageable disease since the general adoption of Mr. Abernethy's practice, that of opening the tumour frequently by a small puncture, healing the wounds, and allowing the sac to contract. This, perhaps, is not so certain as Dr. Macfarlane imagines; indeed, we suspect that at present Mr. Abernethy's method is rather declining in general estimation. At St. George's Hospital, for instance, where free openings and punctures, as recommended by Mr. Abernethy, have been tried extensively and compared together, the latter are nearly abandoned. Mr. Brodie, whose opportunities have, of course, been great, and who has paid no inconsiderable degree of attention to the subject, prefers free openings, and the subsequent application of a poultice, in order that the matter of the abscess may drain out. Mr. Brodie has been led to give a preference to this practice from having observed that, after closing a small wound, the contents of the sac became putrid under the admission of a little air, when sulphuretted hydrogen gas was generated, and the usual remarkable symptoms of a putrid abscess ensued. We remember, ourselves, having witnessed a case of this description. A patient had psoas abscess, which presented in the thigh. It was opened, but at this moment we do not remember how, and after the puncture the wound closed. On the next ensuing day peculiar symptoms of prostration with fever of a typhoid character set in. The wound was immediately broken open, when coagula of blood that had been locked in and putrid gas escaped. We believe the patient died. But we return to Dr. Macfarlane.

Dr. M. observes, that before puncturing the cyst, which it will be recollected, he does in the Abernethian manner, he has derived much advantage from establishing an issue over the lumbar spine; he has also irritated the depending part of a lumbar abscess by the moxa, when, from non-adhesion of the puncture, there was reason to fear that inflammation of the cyst would supervene, and this has been attended in several cases with decided advantage.

Case I.—*Lumbar Abscess successfully Treated by Issue, Moxa, and repeated Puncturing.*—W. J., aged eighteen, admitted July fourteenth, 1826. The abscess presented below Poupart's ligament on the left side. He complained of pain in the left iliac and lumbar regions, but no tenderness, nor alteration of the spinal column, could be detected. He was of strumous aspect; his strength reduced; there were frequent dry cough, hurried breathing, and night sweats; he could not stand erect, or walk without keeping the trunk bent forward at a considerable angle: pulse 120—pyrexia. The tumour had been first observed at the upper part of the

thigh, five weeks previously, but for several months he had been subject to pain in the back, and weakness of the limbs.

"A small caustic issue was formed on the left side of the spinous process of the second lumbar vertebra; and after the eschar had separated, and the discharge was established by the insertion of peas, the abscess was punctured, and about eight ounces of well-matured pus (being apparently two-thirds of its contents) were evacuated. The edges of the wound were brought accurately together, and adhesion effected. He was allowed a milk diet, with a small quantity of wine, and six grains of quina daily; his strength and appetite gradually returned, his pulse fell to eighty in the minute, and the diarrhœa and perspirations ceased. The sac was punctured again in ten days, and the wound closed; but, on repeating this operation for the third time, about a fortnight after, adhesion did not take place; there was, therefore, a daily discharge of pus from the opening for about three weeks, when it completely closed. On the third day after the last puncture was made, he had a rigor, which was followed by pain in the lower part of the abscess, and by a fetid and brownish-coloured discharge. The application of a moxa over the most depending part of the cyst, and of another over Poupart's ligament, checked these symptoms, and restored the purulent secretion to a more natural appearance."

The following case is one of not very usual occurrence.

Case 2.—*Lumbar Abscess—Diseased Spine not discovered till after death.*—A. S. æt. 22, admitted Dec. 13, 1826. A large abscess presented under Poupart's ligament on the right side. No disease of the spine could be detected. The patient was feeble, with little pyrexia. The tumour had been first observed seven weeks previously, but he had been out of health for nearly three years, when his leg was amputated for scrofulous disease of the knee-joint. Three moxas were burnt over the lumbar spine, after which a pound and a half of curdy pus was evacuated by puncture. The wound was closed before more than two-thirds of the contents of the sac had escaped. In two days he had a rigor, followed by pyrexia, and pain in the tumor. On the 19th the bandage was removed, and a pound of flaky pus escaped from the opening. Before the tumor was more than half emptied the wound was again closed, and compress and bandage applied. On the 21st three pounds of pus were discharged; he had now acute pain in the left side of the chest with dyspnœa, and rapid feeble pulse. The pain was removed by local bleeding and fomentations, but vomiting, diarrhœa, and aphthæ came on, the discharge became brownish coloured, fetid, and mixed with air, and he died on Jan. 7.

Sectio Cadaveris. The cavity of the abscess extended from the right side of the spine close to the diaphragm, along the psoas, to the middle of the thigh. The sac was thickened and of chocolate colour, its surface in some places granular, and covered with lymph; through its posterior wall was a small opening, opposite the upper edge of the sacrum, and extending to the two inferior lumbar vertebræ, which, together with the articulating surface of the sacrum,

were carious; a considerable portion of the intervertebral cartilage was destroyed.

It is not an uncommon circumstance for the spine, or the bones of the pelvis, to be extensively affected, without any symptom to excite suspicion during the lifetime of the patient. The fact is, that a large abscess in the loins, lower part of the belly, or upper part of the thigh, should, of itself, lead a surgeon to *suspect* diseased bone. We have formerly related a case of extensive disease of the thoracic vertebræ, in which the patient complained only of pain in one hip-joint. In this case there were carious ribs, and two ulcerated openings in front of the chest led to the affected bones. This patient died of inflammation of the pleura. We lately saw another instance of extensive disease of bone, unaccompanied with prominent symptoms. The patient was an old man, of sallow, unhealthy aspect, and presented himself with chronic abscess of the upper and posterior parts of the thigh, much below Poupart's ligament, and apparently unconnected with it. The tumour was punctured twice, and after the second opening symptoms of inflammation of the interior of the cyst, with secondary hæmorrhage, ensued. He died. On examination, the cavity of the abscess was found to be enormously large, and extended up under Poupart's ligament to the cup of the ilium. Here the whole surface of the bone was bare and rough, and there was also disease of the sacrum and lower lumbar vertebræ. The abscess had only been observed for two months, and up to the patient's first application he had walked about.

Diseased bone, in these cases of large abscess, is frequently not only not suspected during life, but even unlooked for after death. Mr. Brodie has remarked, that a small opening occasionally leads down to exposed or carious vertebræ, which opening may be, indeed has been, overlooked. Surgeons, in their examinations, should be careful to attend to this hint of Mr. Brodie's, or they may unwittingly deceive themselves and others. At the same time, there can be no doubt that large abscesses do occasionally form in the neighbourhood of the psoas, the lumbar, the glutæal, and the abdominal, as well as other muscles, independent of any affection of bone. The cellular membrane is, we know, extremely liable to suppuration, and there is no good reason why this tissue should be exempt in the situations alluded to. Every practical surgeon will agree with us, in believing that an accurate knowledge of the various abscesses that present about the groin and inguinal region is of great importance. Before we pass to the relation of another case, we must express our surprise at the rapid manner in which some of these enormous abscesses are cured, or seem to be so. We lately saw a patient with a very large abscess in one natis; it was punctured, and nearly forty ounces of pus discharged; filled again, and was again opened, no precaution being taken to close the wound. The patient, who was reduced to death's door, acquired flesh and strength under generous diet and bark, and the opening, which at first seemed inclined to be fistulous, healed. No exposed bone was at any time discovered. Dr. Macfarlane gives a fatal case

of lumbar abscess, which is interesting, as it shews the kind of symptoms that occasionally follow the operation of puncturing.

Case 3. *Lumbar Abscess—fatal Irritative Fever and Effusion on the Brain after Puncture.*—W. D. æt. 12, admitted December, 28th, 1826. There was a lumbar abscess projecting from the inner and upper part of the left thigh, and nearly as large as a child's head. There was fixed pain in the lumbar spine, increased on pressure and motion, especially at the lower part, where two spinous processes projected, and the integuments were thickened and painful. Several inguinal and cervical glands were enlarged. The tumour had appeared five weeks before admission, but he had suffered under pain and weakness of the back for some weeks.

A caustic issue was applied, and on the 2d Jan. a puncture was made. The wound did not heal; and, on the 4th, the bandage was removed, and 12 ozs. of matter escaped. In the evening, there was a slight rigor, followed by pyrexia and acute pain in the lumbar spine. For several days, the pulse was from 120 to 140—the skin hot and dry, with vomiting and hiccup—flushed face—hurried breathing—typhoid sordes on the tongue and teeth. There was no pain in the abscess, the discharge from which was diminished, and more like whey than pus. The pain in the spine became so excruciating that he could not bear the slightest motion—he was occasionally delirious, and died comatose on the 19th.

"On inspection, the cyst was found to be considerably large and more extensive in the abdomen than exterior to it, and to extend from above the origin of the psoas muscle to the middle of the thigh. It was free from inflammation, and covered by curdy matter, which adhered firmly to its inner surface. The lumbar vertebræ were curved to the left side, and the three inferior bones carious, and surrounded by pus. The intervertebral cartilages were ulcerated, and an incipient psoas abscess, about the size of an orange, was discovered on the right side of the spine. That portion of the spinal marrow enclosed in the affected bones was softened, the brain was in a state of congestion, there was effusion under the arachnoid membrane, on the surface of the hemispheres, and each lateral ventricle contained about half an ounce of limpid serum."—*Johnson's Journal*, p. 519.

Fatal Results from Amputation of Fingers.—Case 1. A man, aged 44, got the ring-finger of his left hand entangled in an iron chain, employed in raising a very heavy weight; it was torn off at its second phalanx near its joint with the third. He applied at the hospital, and the house-surgeon found it necessary to amputate the ragged end of finger, which was done about the centre of the second phalanx. Nothing particular occurred until the sixth day after the accident, when he was attacked with rigors and pain in the hand. On the next day he was admitted into the hospital under Mr. Brodie.

The hand, especially its dorsum, was a good deal swollen, with diffuse redness and pain—some redness extending in streaks up the

fore-arm, with enlarged glands in the axilla. There was pyrexia and rather an anxious countenance.

Numerous leeches were applied to the fore-arm, and calomel purgatives with fomentations, and antiphlogistic measures resorted to. On the next day the swelling was greater, and the pyrexia continued. On the 8th day, more pain, much swelling of the palm and dorsum, tension, and tenderness of the latter. Leeches were again applied, and repeated on the following day. On the 10th day the hand was much the same, saving that the redness had in some degree subsided —pyrexia, with irritability, and some depression. This night he had a rigor followed by a slight hot stage, but much sweating. He looked anxious, low, and ill. He complained now of stiffness in the *right* arm, on the outside of which was tenderness, fulness, and a slight circumscribed erythematous blush; in short, a purulent depôt was here forming in the cellular membrane. There was a similar appearance commencing on the outside of the right fore-arm. Mr. Brodie determined to try the effects of the oxymuriate of mercury, which he ordered in doses of one-eighth of a grain three times daily.

On the 11th day he said he was much better, which patients labouring under the depôt most commonly do; his pinched and anxious countenance gave his tongue the lie. The belly was now tympanitic, the symptoms merging into symptomatic typhus; there was also slight oppression at the chest.

After this rigors took place at intervals; there was generally a disposition to perspiration; he had rambling delirium, yet if asked how he felt himself, would say he was well; he passed his stools under him. On the 12th day a depôt was observed in the right thigh. On the 13th, diarrhœa having set in, the oxymuriate was discontinued; it had obviously been productive of no benefit. A puncture was made in the hand first affected, and a good deal of pus let out. A puncture was also made in the depôt in the thigh, and pus discharged. On the 16th day, the diarrhœa being checked, the oxymuriate was resumed. He now became rapidly lower, the breathing grew frequent and oppressed, and he sank early in the following morning. For the last two or three days there had been no rigors.

There was no affection of the thoracic or abdominal viscera. The cranium was not examined, neither were the limbs, in consequence of the great repugnance of the friends.

Case 2.—*Amputation of Finger—Erysipelas—Death.*—Wm. Greene, æt. 19, applied at the hospital as an out-patient, at the latter end of December, 1830, with disease in the joint between the 2d and 3d phalanges of the right fore-finger. The cartilages were ulcerated, there was great thickening of the soft parts, and several sinuses led down to the diseased joint. The disease had been the result of a slight accident. He went first to the Middlesex Hospital, but left it to apply to this.

Splints, &c. were employed, but the finger not becoming much better, and the lad being extremely desirous of its removal, it was amputated on January 15th, nearly midway between the metacarpo-

phalangal and first phalangal joint. On the following morning the lad complained of feeling ill, and was rather feverish; he was therefore admitted into the house.

In the afternoon he had a rigor, and in the evening pyrexia; there was some fulness about the stump. Ordered some calomel and James's powder, house physic, and salines. On the 17th the pulse was more frequent, with headach; there were pain and starting in the stump, and a little diffuse redness about the dorsum and palm of the hand. On the 19th he was extremely irritable, and vomited several times. Some diffuse inflammation of the skin and cellular membrane, and also of the absorbents, appeared on the back of the hand. On the 20th the absorbents were inflamed as high as the axilla, where an enlarged and painful gland could be felt. The nitrate of silver was applied round the arm, above the inflamed absorbents and gland; the salines were continued. On the 21st there was little alteration. The nitrate of silver was applied over the inflamed surfaces on the hand and outside of the elbow. In the night he became quite unmanageable. On the 22d, the face had a dull flush on it; skin dry; pulse 130—feeble; tongue red at the tip—white on the dorsum; bowels not open. He was extremely irritable and rather incoherent. Erysipelas of dull colour and without much vesication had appeared round the parts to which the nitrate of silver had been applied, this having produced vesication. The streaks produced by the inflamed absorbents of the arm had nearly disappeared, but the axillary gland was still painful. The inflammation had never passed beyond the upper boundary of nitrate of silver. In the evening he had a furious paroxysm of maniacal delirium—the erysipelatous redness of the hand and elbow had spread, with deep dull colour and indistinct margin. He obtained no sleep till 5 A. M. of the 23d. On that day he was very low, with pulse 140, dry tongue, sordes about the teeth. The urine was drawn of; there was scarcely any in the bladder. He lay in a stupid state, scarcely answering any question. He was ordered some bark and ammonia, and a saline injection was administered.

24th. Passed a pretty quiet night. The stupor has now all the characters of that produced by effusion on the brain. He takes little notice of what is going on around him, but every now and then he suddenly utters some unconnected and irrelevant cries. Pupils dilated and sluggish; pulse 130—feeble; teeth incrusted with sordes; tongue dry—reddish brown; skin cool. The erysipelas has, for the last two days, been spreading on the fore-arm and hand, but little so upon the arm; it is of the same characters as before.

Emp. canth. nuchæ. Radatur caput et infr. capito raso ung. hyd. necnon etiam cruribus. P. c. h. cinchonæ.

On the 25th he was a shade better, calling on the house-surgeon by name, and appearing in all respects more sensible. Erysipelas had left the hand, and was spreading up the arm. Next day the gums appeared somewhat mercurialized. He continued a little better; pulse 110; no heat of skin. Camphor liniment was ap-

plied to the head instead of the mercurial ointment. On the 27th there was little alteration. The erysipelas had left the fore-arm and creeping up over the shoulder, with little tumefaction, a tolerably good tint, and pretty distinct margin. The gums were decidedly affected—small pustules had appeared about the head. He was ordered a little porter. On the 28th there was little alteration. The blister on the neck, which had previously been dressed with mercurial, was now treated with savin ointment. *Ordered some infusion of cinchona and cusparia.*

On the 30th the erysipelas had left the arm, but was spreading a little on the back; he would not take his food or medicine so well as before.

Emp. canth. capiti raso. Hyd. sub. gr. ij. *Ext. Lactucæ*, gr. v. 8*vis. horis. Adde haustui Ammo. carb.* gr. v.

Feb. 2. There has been little alteration in the symptoms since the last report, save that the patient has been gradually sinking. There has been no further return of intelligence, and he has scarcely spoken for the last two or three days; now and then, when disturbed, he will mutter a few unintelligible exclamations. The erysipelas has extended a little on the back, but it is trifling both in character and in extent. Emaciation has taken place to a remarkable degree. On the following morning he died.

Sectio Cadaveris.—*Cranium.* No traces of inflammation of the membranes or substance of the brain. No serous effusion between the membranes. Ventricles large, filled with clear watery fluid; there was about half an ounce in each.

Thorax. Old adhesions on both sides of the chest. In the upper lobe of the left lung some common turbercles, in stages of maturation and softening. Some had formed small vomicæ about the size of nuts. The other lobe of the left lung, and the whole of the right, were free from tuberculous formations.

Abdomen. Partial congestions and vascular injection of the mucous membrane of the lower part of the ileum. Here and there, small ulcerations in the mucous membrane, apparently not follicular, as in fever; there was no attempt at reparation.

We should mention that the stump had healed early, and without trouble.

Another instance of death from amputation of a finger, occurred in the practice of Mr. Babington. We have not preserved any notes of the case, but the following is an abstract of the particulars.

The patient, an old woman, was admitted with much disease of the thumb of the left hand. It was considerably enlarged, the integuments discoloured, and several sinuses led down to denuded bone in the phalangal articulation. Mr. Babington removed the thumb below this point. In a day or two inflammation attacked the cellular membrane and skin of the hand, and spread in an erysipelatous form up the fore-arm and arm. The swelling was not very considerable, the tint of the skin was a dull red, the margin tolerably distinct. Vesications occurred, but the cutis rapidly became mottled from ex-

travasation into its texture, and then gradually died, exposing lymph and serum in the subcutaneous cellular tissue. The affection was by no means of that rapidly destructive character which traumatic gangrene assumes; it was in fact a mixture of erysipelas and diffuse cellular inflammation, occurring in a very debilitated and aged person. At the end of seven or eight days she died, her constitutional powers being evidently incapable of sustaining, or even originating, the reparative process.

A case of a similar kind, though the patient ultimately recovered, occurred to Mr. Brodie. A finger was removed for disease of the first phalangal articulation. Erysipelas succeeded and passed up the forearm to the arm, where it stopped. Some incisions were necessary in the hand, and convalescence was slowly established.—*Johnston's Journal*, October, 1832, p. 530.

Cases of Vesico-Vaginal and Recto-Vaginal Fistula cured.—Two cases of this dreadful deformity, in which operations were crowned with success, have been published. Such cases are always valuable, because they encourage surgeons to persevere in attempts at removing loathsome and almost unmanageable ills, when they might be utterly disheartened by failures by far too numerous.

Case 1.*—Mrs. R., æt. 22, had laboured under vesico-vaginal fistula since her first confinement, which had been protracted and severe; the finger passed readily through the fistula into the bladder, and for eight months many plans had been tried without success. M. Malagodi operated in the following manner.

Having placed the patient as if for lithotomy, he introduced the fore-finger of the right hand, covered with the finger of a glove, into the fistulous opening, and bending it, drew down the left border of the fistula to the orifice of the vagina; and then, with the other hand, he pared off the edges with a straight bistoury. The hand was changed, and the same operation repeated on the right border of the fistula. The pared edges were then brought in contact. To do this M. Malagodi re-introduced the right index finger into the opening, and brought down its left border, and with the left hand passed a small curved needle, fastened with a ligature, through it, near the posterior angle of the wound. A second and third needle were passed in the same manner, at equal distances from each other, and the opposite border was transfixed in the same manner, when the ligatures were tied and the sides of the opening thus kept together. The patient was placed on her back in bed, a catheter kept in the bladder, and the urine allowed to flow constantly through it. Until the morning of the third day the water was passed through the catheter only, but then it began to escape by the wound into the vagina. On the fourth day it was found that the two posterior sutures remained firm;

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* Raccoglitor Medico. Glasgow Journal, February.

and on withdrawing them the union of the sides of the fistula was complete. The anterior ligature, on the other hand, had torn the left border of the wound, and nearly a third of the original fistula thus remained unhealed. This plan was completely successful at the end of a few weeks.

Case 2.*—Isabella Pigot, æt. 28, was admitted into the London Hospital, Dec. 12, 1830, with vesico-vaginal fistula. The opening between the vagina and the neck of the bladder was sufficiently large to admit the point of a fore-finger, and seemed to involve a small portion of the commencement of the urethra; it was oval, its long diameter lying transversely and about 1¼ inch from the orifice of the meatus urinarius. The flow of urine was constant, but the retentive power of the bladder was not then wholly destroyed. The edges of the aperture were callous to only a slight extent. She stated that four months previously she had been delivered of a still-born child after a protracted labour, in which the bladder had not been relieved. Her recovery was speedy, but since her confinement she had been unable to retain her urine.

On the 29th December Mr. Luke proceeded to perform the following operation: The patient being placed as for lithotomy, a female catheter was introduced into the bladder through the meatus urinarius. Weiss's two-branched dilator of the female urethra was then passed per vaginam, and fully opened, by which the fistulous orifice was exposed. Attempts were made to pass tenacula through the orifice, but they were found too little curved, and two hooks were therefore employed. Their points were introduced about an eighth of an inch from the internal side of the opening, and brought out at the same distance on the external, when the sides were next pared by two semi-elliptical incisions made transversely in the vagina; to make the internal it was necessary to use a scalpel, with one half the blade bent at a right angle with the other. There was now some difficulty experienced in passing the ligatures for closing the wound. Small curved needles held in a porte-aiguille would not answer. Mr. L. succeeded with larger ones less curved, passing one on each side of the urethra at a little distance from the edge of the wound; the ligatures when tightened perfectly closed the orifice. The dilator was withdrawn, and an elastic catheter secured in the urethra; the patient was then sent to bed, and ordered to lie on her face and allow the urine to drain on a cloth.

No water passed by the wound till the 1st January, when the ligatures were found to have ulcerated from one side, and the edges of the wound to be so separated as to allow the escape of the whole of the urine. On the 3d the opening was larger than before the operation; the ligatures were removed, the catheter allowed to remain. 6th. Elastic catheter being stopped up was withdrawn. Another ligature was passed in the centre of the opening including more sub-

* Medical Gazette.

stance than before; the silver flat catheter was fastened in and the patient placed on her face. On the 11th, the ligatures having produced ulceration, were removed, but the wound still adhered; a clean catheter was introduced. 15th, Catheter has become stopped; wound re-opened and nearly of former size.

March 19th. Mr. L. pared the edges of the opening by carrying a single hook through the sides and excising them with a common scalpel; a single ligature kept them in contact. The patient was placed on her face and a catheter introduced as before. On the 26th, the ligature having produced ulceration, was removed; the sides of the opening were adherent, and all the urine flowed by the catheter which was allowed to remain. On the 9th April the catheter was removed; the fistulous opening was perfectly closed. A stillicidium urinæ remained for a short time, but as the parts regained their tone it subsided. On the 25th she was discharged cured.

Case 3*.—An Irish woman, ætat. 30, was admitted into the London Hospital on the 24th May, under the care of Mr. Scott. A fistulous communication was found to exist between the rectum and vagina, and the fæces escaped through it into the latter. Her first labour had occurred about ten weeks previously, and during a severe pain whilst the child's head was in the vagina, the attending midwife passed the hand into the vagina, at which time the patient felt something give way.

The bowels having previously been freely opened, Mr. Scott operated on the 13th June. He commenced by pulling down the vagina with a double hook, then pared off the cartilaginous edges with a probe-pointed bistoury, brought the raw edges together, and retained them in contact by means of three sutures. She was strictly confined to slops that the parts might not be disturbed by the occurrence of motions. During the night she passed her urine thrice and rested well. On the following night she was very unwell and fainted twice. On the 17th she was ordered some castor oil by the dresser, which was followed by a motion and the passage of a part of the fæces by the vagina. On the 26th Mr. Scott made an examination of the parts. The edges of the opening had united throughout nearly their whole extent, a small ununited portion only being left, through which some feculent matter passes when she has a motion. This is the last report, and consequently the result of the operation is not yet determined.

There is one circumstance to be recollected in perusing such cases as the foregoing. The recto-vaginal, or vesico-vaginal fistula is usually the consequence of labour, and although a temporary cure be obtained by operations, the patients are liable to future pregnancies. We must not then consider the case as concluded when the female leaves the hospital cured. Future inquiries should determine whether that cure is permanent. Unfortunately such inquiries are too

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* Lancet, July 21, 1832.

often neglected, or even when made, the issue, if unfortunate, is not published so eagerly as the former seeming success.—*Johnston's Journal*, October, 1832.

Fibrous Polypus of the Nose by Mr. Symes.—Thomas Woods, aged 15, from Gilford, entered the hospital last January, on account of a polypus in the right nostril, which could be seen by looking into the nose, and felt by introducing the finger behind the soft palate. It had existed for several months, and was increasing rapidly. From an attempt, which was made soon after his admission, to effect the removal of the tumour by extraction, it was ascertained that it possessed the firm fibrous structure that has been particularly remarked and described by M. Dupuytren.* It could be torn longitudinally, but resisted efforts to rupture it transversely no less obstinately than if formed of tendon, and bled most profusely when injured. In accordance with the conclusion of M. Dupuytren, that this kind of growth is certainly and speedily fatal if allowed to proceed, and that the only method of effectually eradicating it is evulsion, various attempts were made to force the polypus away, both by the nose and mouth. Forceps with strong blade and projecting teeth were constructed for the purpose, and the nostril was slit open to permit their more effectual application. Nothing but some small shreds could be extracted, and it was at length ascertained that the attachments of the tumour were so extensive as to render the operation quite impracticable. In these circumstances the patient was dismissed, the nostril having healed without leaving any trace of its division.

He returned on the 12th of August, much reduced in health and altered in his appearance. The polypus presented itself both beyond the nose and palate, and he had repeatedly lost considerable quantities of blood. It was now evident, that, unless the disease were removed, he must speedily sink under it, and the urgency of the case seemed to warrant the severest measures. It had been ascertained that the attachments extended all the way round the posterior margin of the nostril, and there was reason to suppose, that if the superior maxilary bone was removed, they would be rendered accessible.

This operation was accordingly performed, on the 21st, in the manner described in last Report, and without any difficulty except what proceeded from the resistance of the patient, who lost all command of himself. After the bone had been removed it required very great force to disengage the tumour from its connexions. It was taken out perfectly entire, and measured four inches in length, two and a half in breadth, and one and a half in thickness. The superior palatine artery was the only deep seated vessel that required to be tied. The cavity was filled with pieces of lint, and the edges

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* Sabatier, Medecine Operatoire.

of the wound were stitched together. On the evening of the day succeeding that of the operation, as the patient's pulse was full and frequent, and his breathing difficult, twelve ounces of blood were taken from his arm. On the following day his breathing was easy, the wound looking as if about to heal entirely by the first intention; he took his food and seemed doing quite well. On the morning of the next day a patient in the same room spoke to him, at 5 A. M., when he said he felt quite comfortable. At 6 he was found to be dead.

On dissection, the unexpected discovery of another polypus was made. It originated from the left nostril, and adhered not only to the whole of the upper and lateral margin of its pharyngeal opening, but also to the base of the skull. It, no doubt, escaped observation at the time of the operation, from having been pressed out of reach by the larger one, and had probably enlarged subsequently, as well from being no longer compressed, as from the irritation which it necessarily suffered. This polypus could not have been eradicated, so that the only subject of regret in regard to the operation is, that it was undertaken at all. The hopeless state of the case, and the well ascertained fact, that fibrous polypus exists almost invariably, not in numbers, as the softer excrescences from the nasal cavity do, but singly, will, it is hoped, be regarded as a sufficient justification of the attempt. No other morbid appearance could be perceived, so that the cause of his death is rather obscure.—*Edinburgh Medical and Surgical Journal*, p. 322, October, 1832.

Mr. Syme *on Erythema.*—In regard to the period now under consideration, before proceeding to speak of individual cases, it may be well to make some remarks on the tendency to erythema which has prevailed to a very unusual extent in this city during the spring and summer of the present year. As this term has been used to denote different morbid conditions, the precise meaning to be attached to it must be explained in the first place. It is admitted that inflammation of the skin may either proceed directly from local irritation or be preceded by constitutional disturbance, which seems to be its exciting cause. When of this latter origin, the inflammation is sometimes attended with a slightly swelled, smooth, red, glossy state of the skin, and terminates in vesication, followed by desquamation of the cuticle; it is then named erysipelas. On other occasions there is hardly any perceptible swelling; the redness is of a lighter or rosy hue, and there is no vesication; when the disease may be designated Erythema. And, along with both of these forms of inflammation of the skin, proceeding from constitutional disturbance, the subjacent cellular substance may be affected, in which case there is considerable diffused swelling, and a risk of extensive suppuration or sloughing; a complication which is expressed by prefixing phlegmonous to the other titles. Cullen employed erythema to denote inflammation of the skin proceeding from local causes; but it seems

unnecessary to appropriate any term for this purpose, since less confusion would be occasioned were it in these circumstances simply styled inflammation of the skin. On the other hand, it is of great importance to distinguish the form of constitutional cutaneous inflammation, to which the term erythema has now been applied, because there are here certain grounds of distinction which must be carefully attended to in practice.

Erythema does not show nearly so much predilection for the integuments of the head as erysipelas, and has a much greater tendency to spread, often leaving hardly any part of the body free from its successive attacks. It is usually preceded and accompanied by much more constitutional disturbance than erysipelas, and seldom, if ever, appears in a person on whose body there is not an ulcerated surface of more or less extent. It does not occur immediately after the infliction of incised wounds, but after the granulating process has been established; sometimes not until the cure is nearly completed. It is preceded by severe, prolonged, and frequently repeated rigors, with bilious vomiting and headach. It commences often very insidiously, by a small light coloured redness at the edge of the sore, and then spreads so capriciously, as to render vain all attempts at calculation or anticipation. It is attended with a small frequent pulse, burning heat of skin, insatiable thirst, nausea, a disposition to retch, loss of appetite, yellowish-white furred tongue, extreme general uneasiness, haggard brownish-yellow complexions, great bodily and mental weakness, and, in the progress of the disease, confusion of ideas, occasionally amounting to delirium. It is very tedious and distressing, but seldom fatal. Of the cases that occurred under my care during the last year, there were only two that did not recover. One of these has been mentioned in the preceding report, viz. Mrs. Buchanan, whose breast was removed at her own house; and the other was that of Mrs. Grey, aged 72, who had a cancerous ulcer of the mamma cut out in the hospital on the 16th of June. She had come from the country two days previously, and could not be persuaded to let the operation be delayed longer. Slight erythema of the breast followed, and was attended with bronchitis, to which she had been subject. She died on the 28th.

The treatment found to be most efficient in the first instance is the administration of an emetic, which if employed before the redness appears, often seems to cut short the disease. When the erythematous blush shows itself, little can be done to arrest its progress, and the great object is then to palliate the patient's sufferings, and support his strength, so as to prevent him from sinking under the disease. Bleeding, which is so useful in erysipelas, does not seem to be of any service, whether local or general. Opiates afford great relief from the pain and burning heat, and ought to be given frequently in moderate doses. The secretions should be promoted by calomel and the saline purgatives, and until decided indications of weakness appear, the diet of the patient should consist of little more

than milk diluents to quench his thirst, and a little farinaceous food. Whenever the strength seems to be failing, whether this be in the advanced stages of the disease or at its commencement, owing to the previous weakness of the patient, nourishment and stimulants must be diligently supplied. Beef tea, animal jelly, arrow-root, with wine, or spirits and water, are the best means for this purpose. It may finally be remarked, in regard to the treatment, that tartrate of antimony, which when given internally, proves of so much use in erysipelas, does little or no good in erythema.

The predisposing cause of erythema is, undoubtedly, some peculiarity of the atmosphere; but this, though often resulting from bad ventilation, cannot be ascribed to it alone, since such an error was carefully avoided in the Surgical Hospital, and the disease occurred fully as often, in proportion, out of doors. It repeatedly happened that patients operated on in the hospital escaped, while, at the same time, others suffered in various well-aired parts of the city. Operations on the chest, such as those for removing the mamma, or dilating sinuses of the breast or axilla, were most frequently followed by the disease. It did not occur in any case of *fistula in ano*, but proved troublesome in one of lithotomy. The gentleman who was the subject of it seemed on the fifth day of the operation to be nearly free from complaint, when he shivered, and a slight blush appeared on the left hip: it then attacked the right one, travelled round the loins and front of the abdomen, descending to the scrotum, and at length terminating its course by going down the limbs, thus prolonging his recovery to six weeks. Amputation was not followed by erythema, except in a few cases where the fingers were removed.—*Ib.*

APPENDIX.

Continuation of* Dr. EVORY KENNEDY'S *Paper on the Application of the Actual Cautery in Vesico-Vaginal Fistula.*

I AM happy to add, that I have ascertained from Dr. Brady, while the preceding part of this paper was at press, that one of the patients alluded to still continues to experience the benefits of the operation, although many months have elapsed since she submitted to it. The other patient I have not been able to see lately, but conclude that she still feels its good effects, as she promised to return to me, should she become worse.

Having received the following letter from Dr. M'Dowel, in answer to an inquiry as to the result of the operation in the other case alluded to, I subjoin it at length, as I doubt not, that his opinion, derived from the experience of its utility, must prove interesting to those who wish to attend to the subject.

A curious fact connected with Dr. M'Dowel's patient was, that the menses, which had not appeared for some time, were, in her, caused to flow immediately on the application of the cautery. Possibly the determination to the uterus by the heat of the iron in the vagina, produced this effect.

" *No.* 66, *Eccles-st.*, *Oct.* 18, 1832.

" DEAR SIR,

" I have tried the actual cautery in two instances of vesico-vaginal fistula, with considerable success: in the late case, as you are aware, the laceration was of great extent, at least fifteen lines, situate at the junction of the urethra and bladder; the edges hard and round; the mucous membrane, vascular, villous, and highly sensible, protruded through the aperture; on a small extent of it there was a lymphy deposit, closely adherent; by using three curved spatulæ the opening was reached with great facility; two directors introduced by the urethra were sufficient to preserve the mucous membrane from injury by the cauterization, which was freely used; little fever succeeded, and but little local irritation. About three weeks after the operation, the benefit derived was so considerable, our patient was unwilling to suffer more pain. She could retain urine for nearly three hours. The opening so much contracted that,

* From page 242.

I have no doubt, one application more of the iron would have caused its complete closure.

"On admission, this woman was in a most miserable state, from excoriation and ulceration of all the external parts, caused by the constant dribbling of the urine.

"Yours,

"E. M'DOWEL."

"To Dr. Evory Kennedy."

TO THE EDITOR OF THE DUBLIN MEDICAL JOURNAL.

"SIR,

"The present inconvenient Medicine Chest, considered in connexion with the army and navy establishments of these countries and their extended colonies, assumes a degree of importance well worthy the attention of the medical gentlemen engaged in those departments, to whom a knowledge of this improvement, it is hoped, will reach, through the medium of your excellent and widely circulating Journal. It was suffering from the confused arrangement of the present one, on board of ship, that first directed my attention towards the 'Medical Repository,' an improvement, in bringing forward which in contradistinction to the medicine chest, I consider, as introducing order for irregularity, and the simple but useful arrangement of the apothecary's shop, for the confused jumbling of a medicinal packing case. Having appealed to the members of the medical profession in this city, as to its merits compared with the Army and Navy Medicine Chest, and that having been responded to in a manner which does equal credit to their judgment and generosity, I take this early opportunity of returning them my most heartfelt thanks, and have the honour to remain,

"Sir, your obedient Servant, &c.

"BERNARD O'REILLY,

"Licentiate of Apothecaries' Hall.

"*Dublin, October*, 1832."

Description of O'Reilly's MEDICAL REPOSITORY *proposed as an improved Substitute for the present Army and Navy Medicine Chest.*

Fig. I. The Medical Repository, consisting of three cylinders and an outside case to which a door is attached, having a recess A on its inner side, fitted up with shelves; this when closed occupies the doorway X and Y, fig. III and IV.

Fig. II. A cylindrical barrel, divided into a number of compartments for holding drawers, and furnished at top and bottom with a spindle, by which it revolves upon the upper surface of base B, fig. III.

Fig. III. A cylinder, consisting of a base B arranged for holding large drawers, and a top part C terminating a few inches above fig. II. and IV., which revolve within it by two pieces crossing at right angles, through the centre of which the upper spindle of fig. II. plays. This portion C has a door-way X to expose the contents of fig. II. and IV., and the external surface of the remaining portion is fitted up with shelves for bottles; the top and bottom have spindles, and revolve in like manner to fig. II.

Fig. IV. A hollow cylinder, shelved upon its outer surface, and containing a door-way Y to expose the contents of fig. II.; it terminates by two pieces crossing each other at top and bottom, through which holes are made for the spindles of fig. II., around which it revolves. This cylinder is situated immediately next to fig. II. and within part C, fig. III.

Fig. V. The outer case continued a sufficient height to admit a cavity D above the top of the cylinders the whole breadth of the apparatus. This cavity is covered by two hinged lids, E E. The door with its recess, as seen fig. I. is here closed, and the shelves within it for holding scales, mortars, &c. &c., are exposed by means of a smaller door F contained within the former.

Fig. VI. An angular shaped drawer fitted to one of the compartments fig. II.

Fig. VII. A bottle standing in a semicircular coaster to prevent shifting upon its shelf, and secured by a sliding clasp round the neck, one end of which is firmly attached behind the bottle.

Use.—When the Medical Repository, as seen fig. I. is opened, any part of either of the cylinders can be brought to the front by making them revolve upon their spindles, so as to expose whatever bottles or drawers may be required, and which are labelled. Thus in an instant, at all times and places, presenting the same facilities for dispensing medicines as an apothecary's shop.

To estimate the value of the above improvement, we have but to contrast its systematic arrangement with the present ill-planned Army and Navy Medicine Chest, constructed without reference to convenience, order, or regularity, in the dispensing of medicines, and solely acting the part of a packing case. It merely consists of a square box, having a tray that drops into it, divided into a number of compartments for holding bottles, of which when placed in it you can have but a bird's eye view. The space beneath this contains but one drawer, to which there is scarcely any access, in consequence of a confused collection of jars, pots, and paper-parcels, heaped together without the least regularity, thus presenting no advantage compared with those of the Medical Repository, of which the following are but a part:

1. *In its Economy.*—As upon the foregoing principle of construction it can be made for the same if not less expense than the present one, and once furnished, will last many years. Contrast this with the present medicine chest, which from its applicability to private purposes, such as store or clothes chest, affords sufficient inducement of being renewed in almost every three or four.

2. *By its facility for Travelling.*—It always holding the articles with that ready security that a moment's warning is sufficient. This mode of arrangement has but to be contrasted with the present medicine chest, which takes a considerable time to prepare, in consequence of the articles it contains being always spread out upon tables or shelves, for the convenience of dispensing, unless, as is sometimes the case, they keep an extra one in readiness in case of sudden emergency, which must add greatly to the general expenditure of the army medical department, especially as one is necessary to every detachment.

3. *By its Utility upon a March.*—Provided the Medical Repository be placed in a convenient situation upon the baggage cart, should a man be taken suddenly ill upon the road, without the least inconvenience any article necessary may be obtained, free of disturbance to the rest, or loss of time to the patient; an advantage, I presume, which, at the present period of sudden attack from cholera, when so much depends upon prompt attention in the promonitory stage, must place its arrangement far superior to that of the medicine chest now in general use.

The above when made and arranged upon a small scale, and its compartments numerously subdivided, would form an excellent portable museum, or cabinet companion for a chemical laboratory, medical or philosophical library, and be highly worthy the attention of persons collecting specimens from the animal, vegetable, or mineral kingdom, as preserving those articles with that systematic arrangement which would greatly enhance such a collection. Also to gentlemen engaged in lecturing on materia medica, chemistry, or mineralogy, to whom a systematic arrangement would be valuable, it enabling them to procure instantaneously the articles intended for exhibition, whilst it would not be less necessary to the examiners on those subjects, in affording them the ready means of bringing the candidate's knowledge to a practical test.

The inventor, being fully aware of the benefit arising to reading or study in having the eye familiar with the various articles presented by nature or art, has therefore every confidence in offering its arrangement as a great acquisition, in preserving, without confusion, the specimens which otherwise would be lost or forgotten in a few years, and also by giving a stimulus to make such collections as might lay nature and art before them on that extended scale which would most likely induce a future inquiry into the regions of natural philosophy.

Dr. Maunsell *and the* Reviewer *in the Dublin Journal of Medical and Chemical Science.*

In the last number of this Journal, there appeared, in a note appended to the Review of Ingleby on Uterine Hemorrhage, some observations on a paper by Dr. Maunsell "On the Management of the Placenta in Natural Labour," which had been published in the previous number. To these remarks Dr. Maunsell has replied in a letter published in the Lancet, October 13th.

In that communication Dr. Maunsell charges us with prostituting this Journal to the purposes of party puffing, and complains that he had no means of vindicating himself in this country. To the first of these accusations, we hope it is unnecessary for us to reply; the principles upon which this Journal was commenced, and the manner in it has been conducted, are before the public, and having been weighed in the balance, have not, we trust, been found wanting. With respect to the second, a few words of explanation may be of use; we offered to Dr. Maunsell an opportunity of vindicating himself in this Journal; we stated to him that we would be most happy to publish his defence; but we certainly refused to publish a letter containing charges upon our honour that were not only unfounded, but which existed only in his own imagination; at the same time stating, that if the gross personalities were removed, its insertion would be allowed.

To prove still further our perfect impartiality, we here copy from the Lancet such portions of Dr. Maunsell's letter as are relevant to the actual matter at issue, and we subjoin to them the reply which we have received from our Reviewer. We have herein adopted the line of conduct that appeared to us most consonant to the rigid dictates of justice. The public are now in possession of all the facts, and can judge whether the observations in the note have or have not been established. We have done our duty, and we thus wash our hands of this unpleasant controversy for ever.

DR. MAUNSELL'S STATEMENT.

"Now, passing over the novel policy of an attack in an apparently editorial article of a journal, upon a paper already so far sanctioned by the editor of the same journal as to have a place in its pages, I shall at once proceed to lessen the gentleman's astonishment by, if it be possible, removing his ignorance. He tells us that he has read the paper on which he comments; but if he did so, and be capable of comprehending the passage I shall presently transcribe, may I ask how he can charge me with treating of any part of my practice 'as a modern improvement?' After adverting with, I trust, the profoundest respect to some slight omissions in the works of three writers that are in the hands of every student here, my words are, 'By pointing out a few peculiarities in the mode of conducting the latter part of the process of labour *as adopted in the obstetric schools of this city*, it is hoped that those deficiencies may be in some degree supplied,' &c. So far I shall merely ask the gentleman, is his astonishment removed upon this point? Now, with respect to my having attributed the merit of introducing the practice in question to my master, I can at once deny that I did any such thing. I simply mentioned the fact of his having first directed my attention to it, and it gives

me peculiar pleasure to be able, upon any occasion, to acknowledge this among the many benefits for which I am indebted to his kindness. As for the spoliation of Dr. Clarke's honours, of which the gentleman accuses me, my defence is, that I should never have thought of separating Dr. Clarke's name from 'the obstetric schools of this city,' with which his valuable report of the Lying-in Hospital inseparably connects it.

"So much for the gentleman's capacity of comprehending plain language; now for his acquaintance with the treatises of the distinguished practitioners with whose *names* he appears to be so familiar. Dr. Clarke's paper he certainly has looked into, for it must have been in it he has seen the names of Dr. Osborne and Mr. White, but so strongly does the plainest language operate upon his faculties, that he seems to suppose Dr. Clarke ascribes merit to those gentlemen for the production of a practice which the Doctor actually treats of as an addition to, and improvement upon, their excellent instructions. As for Mr. White and Dr. Osborne's works, if he takes the trouble of looking into them, he will find that so far from insisting upon the peculiar mode of employing pressure advocated in my paper, neither of them alludes in the most distant manner to the employment of pressure at all."

OUR REVIEWER'S STATEMENT.

"It is a matter of serious regret to us, that certain observations made upon a Paper of Dr. Maunsell's, in what we conceived to be the proper discharge of our duty as a Reviewer, should have so far excited the indignation of that gentleman, as to induce him to lose sight, as well of the respect due to himself, as of common courtesy. Dr. M. would have better consulted his own dignity, and have been more likely to carry conviction, if such were possible, to the minds of his readers, had he avoided invective, and at least attempted to disprove the statements made in our note.

"We are charged by Dr. Maunsell, in his letter in the Lancet for Saturday, October the 13th, with misrepresenting his words,* and attributing to him a statement he never intended to make, in our allusion to the following passage: "for insuring both objects, namely, that the labour be accomplished solely by the action of the uterus, and that the latter be made to contract fully upon its contents, a rule of practice first pointed out to me by my friend and former master, Dr. Johnston, has been adopted in the Wellesley Institution with such success, that we scarcely ever meet with a retained placenta, &c."—D. J., p. 282. Our observation on this passage was, that Dr. M. *appeared* to ascribe the merit of the introduction of the practice to

* Dr. Maunsell talks a great deal about our not understanding plain language. It is not a matter of much wonder with us, that our ideas of plain language should not correspond with those of an individual, who tortures our stating that a certain line of practice was known before his friend Dr. J. was in existence, into a *very wanton attack* upon that gentleman; or who describes a simple remark, drawn from us on the perusal of an observation in Ingleby's work, as written with *singular pathos*. We are inclined to think it would have puzzled Longinus himself, extensive as was the sense in which he used the term pathos, to discover how it could be attributed, in the slightest degree, to the remark in question.—*Reviewer.*

his master, Dr. Johnston. We repeat this assertion, and we can assure Dr. M. that several persons, medical and not medical, to whom we showed his Paper, and who were perfectly ignorant of the controversy, drew exactly the conclusion that we did. We would ask any unprejudiced man, if a surgeon, wishing to set forth the superior practice adopted in his dispensary or institution, were to publish, among other *peculiarities*, that splints were employed there with great advantage, in the treatment of paralysis of the wrist, arising from the absorption of lead, and that *his attention was first directed to this practice* by his friend and former master, Surgeon ———, would not his readers conclude, that he was either ignorant of the fact, that the practice was introduced by Dr. Pemberton, and was to be found recommended in elementary works, or that he wished to ascribe to *his master* the merit of introducing it. We fully grant that such may not be the strictly logical conclusion, but we as decidedly maintain, that it is the natural one; that is, supposing the sentence to have had any meaning at all.

"Indeed, we are strongly reminded of the proverb—"Save me from my friends, and I will save myself from my enemies." Dr. Johnston has very little reason to be obliged to his friend in the present case: for if, as he states in his letter, he only intended to thank Dr. J. for imparting to him information already well known, and to be found in the standard authors, which he ought to study, it was a pity he could not select some more important benefit towards which to draw public attention; on the other hand, he has even less reason to be obliged to him, if it was merely a friendly endeavour to heap unmerited honour upon him, as, had the attempt escaped our notice, we cannot conceive how Dr. J. himself could have avoided disclaiming it. He, at least, must have been aware of the practice having been insisted upon by preceding authors: a fact, the ignorance of which, on Dr. M.'s part, his letter, and more particularly the evasion it contains, of his never having intended to separate Dr. Clarke's name from the obstetric schools of this city, the more decidedly convinces us.

"Dr. M.'s attempts to elude our accusation, prove his own weakness, by leaving the broad question, and taking up a collateral one, with a view to avail himself of the *tu quoque*, which is the worst possible line of defence. We criticised Dr. M. for attempting to bring forward, as apparently new, practice long known and acted upon, in which he indirectly imputes merit to himself, and endeavours to place the laurels of other men on the brows of his friend. Our position was, that the merit of what he recommends in his paper, was due to others before either Dr. J. or Dr. M. were born. He does not therefore perceive the full extent to which we deny his and his master's merits: we do not merely clip a twig off their misplaced laurels, as Dr. M. would lead the public to suppose by confining himself to the word pressure; we remove the whole branch from their brow. We must, therefore, again refer him to the authorities already suggested by us. He will find that amongst

other important points of practice insisted upon by White, he requires that "the child should be expelled in the most gradual manner by the woman's pains, and that the womb be made to contract itself from its fundus; its neck, and even its middle, being kept from contraction by the part of the infant which remains within."—P. 107. He will find "*pressure* recommended to assist the uterus in expelling the placenta."—P. 112. He will find it recommended "to bring down an edge of the placenta with the finger as soon as it is within reach."—*White*, p. 112, London, 1785. Let him consult Osborne, and he will find him particularly insisting on preventing the too sudden, irregular, and misplaced contraction of the uterus, by obliging it first to begin to contract at the fundus, during the birth of the child, in the slowest and therefore best possible manner, "and this for the purpose of preventing retention of the placenta and hæmorrhage."—See *Osborne*, p. 34, 35, 36, London, 1795. If he will continue his researches, he will observe that Dr. J. Clarke, after announcing "that he had little to add to the excellent precepts of the two preceding authors," states that "he had been in the habit of pursuing the fundus of the uterus in its contraction with the hand on the abdomen until the fœtus be entirely expelled, and afterwards of continuing the pressure, to keep it, if possible, in a contracted state." If he will continue his researches still farther, he will find that Smellie insisted upon exactly the same plans being adopted, in certain cases, many years before.—See *Smellie*, London, 1784, v. iii. p. 132, 126, &c.; and that Ryan also recommended it within the last few years. He will then see whether we were correct in the statements made in our note. But before passing from this gentleman's clumsy attempt to escape from our accusation, upon his *peculiar pressure*, let us examine the accuracy of an unqualified assertion made by him in his letter; it is this: "as for Mr. White and Dr. Osborne's works, if he takes the trouble to look into them, he will find, that, so far from insisting upon the peculiar mode of employing pressure, advocated in my paper, *neither of them allude, in the most distant manner, to the employment of pressure at all.*"—p. 91. Yet, one of the passages which first met our eye, on looking into White's chapter on Natural Labour, was the following: "sometimes an interval of eight or ten minutes succeeds the birth of the child, when, a pain coming on, the secundines will be easily extracted by gently pulling the navel-string, *and have an easy pressure upon the abdomen, by assisting the uterus to contract, will be of service.*"—White, p. 112.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XX.—*A Case of Congenital Inguinal Hernia in an Infant, attended with Strangulation of the Intestine. To which are annexed some Cases and Observations on Congenital Hernia of the Brain, &c.* By ROBERT ADAMS, A. B., Member of the Royal College of Surgeons, and one of the Surgeons to Jervis-street Charitable Infirmary; Lecturer on Anatomy and Surgery at the Richmond Hospital School of Anatomy and Surgery, Dublin.

ALTHOUGH the surgeon is frequently consulted in cases of congenital inguinal hernia in young children, I believe the examples where this complaint has been found complicated with a strangulation of the intestine, have been exceedingly rare.

Young subjects, are not, however, entirely exempt from this occurrence,—"Mr. Pott saw a child of one year old die of incarcerated rupture. Gooch has recorded an instance, which proceeded to mortification in an infant of ten weeks, and one of six months, perished from strangulation, in the Hospital of Leyden."*

* Lawrence on Hernia.

The only instance of successful operation for the relief of strangulated hernia in the infant, which I find recorded, occurred in the practice of Mr. Long, in St. Bartholemew's Hospital. The age of his patient was only fourteen months, and it appears that the hernia was inguinal, not congenital.* .

The case which I shall now adduce, appears to me worth recording, not only as it differs from any of those above-mentioned, but as the result of the practice here adopted, establishes what, no doubt, might have been anticipated, that there is nothing either in the congenital nature of the hernia, nor in the circumstance of the patient being yet an infant, to contraindicate the propriety of having immediate recourse to the operation of dividing the stricture, when all other means have failed to afford relief. The relation of such cases is calculated to direct our attention to the important fact, that constipation of the bowels with vomiting may, even in the youngest children, occasionally have its source in a strangulation of the intestine.

The inability of infants themselves to make the exact seat of their sufferings known, and the too frequent neglect and oversight of their ordinary attendants, are circumstances, also, which must keep alive our vigilance, when called upon to afford our assistance to very young children labouring under symptoms similar to those which, in this case, accompanied the strangulation. Here the real cause of such symptoms had existed unobserved for two days, and when proper advice was first had, the operation seemed to be the only resource left; the delay even of a few hours more, I have no doubt, would have been fatal.

Case.—William Furlong, ætat. one year and six months, a puny, emaciated child, still at the breast, was admitted into Jervis street Hospital on Sunday evening, March the 18th; the countenance was pale and sunken, the eyes languid, and surrounded with a dark circle; the child was restless, feverish, and thirsty, and every thing swallowed was instantaneously re-

* Lawrence on Hernia.

jected from the stomach, while the bowels (which heretofore had been affected with an habitual diarrhœa) were now, and had been for the last two days, in an obstinate state of constipation. Upon exposing the abdomen, we observed that it was prominent, tense, and tympanitic, and the right inguinal ring appeared to be distended by the broad base of a pyramidal-shaped tumour, the apex of which was formed by the lowest part of the scrotum; this tumour had just the same tense feel that the abdomen itself had, and evidently contained intestine in a state of strangulation. The lowest point of the distended scrotum was intensely red from inflammation; this swelling, which constituted the hernia, was painfully sensible to the slightest touch, and the whole abdomen, both as to tension and sensibility, was nearly in a similar condition. We learned upon inquiry that the parents had observed the child to have been ill for the last forty-eight hours; that until this day they had never noticed the inguinal swelling; it appears, however, nearly certain, that the child's illness commenced with the sudden strangulation of the intestine, the occurrence of which was marked by vomiting, followed by the accession of fever, restlessness, sudden cessation of the habitual diarrhœa, and constipation.

Treatment.—This it was plain was a very urgent case, and it appeared that an immediate operation held out the only chance of safety to the little patient. At first, however, I made a trial of the taxis, but the sensation communicated to the hand on examining the abdomen and the tumour itself, and the state of irritability into which the child was thrown, whenever the taxis was attempted, soon made me desist, after the first ineffectual attempt, from having recourse to so painful an experiment, and one to which I resorted more in conformity to usage than with the expectation of success. I therefore summoned a consultation for eight o'clock in the evening, and in the mean time a tobacco enema was directed to be thrown up, and the child was ordered a warm bath. On our visit at 8 P. M., however, we found our poor little patient in no respect relieved, but evidently

weaker; it was therefore brought at once into the operation room. With the assistance of Mr. Ellis, one of the surgeons of the hospital, Dr. Hutton, and Mr. Power, I performed the operation in the following manner: The child having been placed in a convenient position on the table, an incision about two inches and a half in length was made, which commenced at the base or broadest part of the tumour, near the external abdominal ring, and extended to nearly the bottom of the scrotum. By this incision a considerable depth of soft, fatty, cellular membrane, of the usual granular appearance, was divided; on dissecting this layer off towards the side, a membrane of a reddish hue covered with loose shreds of cellular structure was exposed. This membrane seemed tense and much distended, but when, with difficulty, some of it was pinched up between the finger and thumb, the intestine was felt within it. A small opening was made into the lowest part of this distended tunica vaginalis; a director was introduced, and a considerable quantity of serum flowed out; a pair of scissors was then passed along the groove of the director, and the tunica vaginalis completely divided up the external abdominal ring. The following parts now presented themselves, and as there was scarcely any bleeding, they were all seen in their natural colours. At the very lowest part of the little cavity thus exposed, lay the testis, which was of a brilliant azure colour, overhung on its outer side by its epididymis; superior to these, but in immediate contact with the testis, was the strangulated portion of intestine; it was about the size of the largest cherry, with a polished surface, remarkably tense to the touch, and of a deep marone shade, a colour which was strikingly contrasted with the aspect of the epididymis and the brilliant azure hue of the testis. The stricture was remarkably tight; an ordinary sized director could not pass it, without undue force; but a probe, substituted for it, passed up into the abdomen. This was next withdrawn, and, guided by the nail of the index finger of the left hand, a small blunt-pointed bistoury, as used by Sir A. Cooper, was cau-

tiously insinuated, and a slight division of the stricture having been made upwards and inwards, the intestine was returned into the cavity of the abdomen; and lastly, the lips of the wound were united by three stitches. From the irritable state of the stomach, it was deemed imprudent to give any medicine by mouth; an anodyne liniment was therefore applied to the abdomen: the child slept soundly for three hours after the operation, and on awakening, discharged a quantity of flatus, which was soon followed by a copious evacuation of fæces. On Monday morning, at the hour of visiting the hospital, we found that the countenance of the child appeared lively, and that the blood had returned to the cheeks. It drank at the breast, and the stomach was no longer irritable; of course the fever, thirst, and restlessness subsided, and the abdomen became soft and natural.

It is scarcely necessary to pursue details further than merely to mention that the sutures were removed on the fourth day, immediately after which the wound gaped somewhat, and the edges became a little inflamed; but on the fifth day there was a healthy discharge from it, and it soon healed from the bottom. The child is now restored to health, except that it has the hernia still; it has gotten a truss, and if the mother pays proper attention, I have little doubt that by its use, a radical cure of the hernia may be obtained.

My hope that in the case of this little patient, a permanent cure will follow the habitual use of a well adjusted truss, is not founded on my experience of any so successful a result having followed the operation for the relief of stricture in cases of strangulated hernia in the adult: but when I consider the changes which the inguinal canal undergoes from childhood to puberty, I perceive there is a gradual process taking place, which would seem to favour powerfully a natural cure, and which should encourage us to pay much attention to those contrivances by which art may assist this natural curative process.

In the infant, it is known that the internal abdominal ring, instead of being nearly over the centre of Poupart's ligament, as it is in the adult, is really situated near to the middle line,

close to the pubis, and, consequently, almost directly behind the external abdominal opening.

Now, it will also be recollected, that the sides of the pelvis in their progress towards the adult developement gradually become broader, and as they expand, the internal abdominal ring is carried outward with them, while the external abdominal ring never varies its position, nor abandons its close relation to the pubis. That the external abdominal ring shall always remain permanently fixed, is easily accounted for, as this opening is formed between the tendons of the external abdominal muscle, where they are fixed to the bones of the pubis; and why the internal abdominal ring should pass outward, and thus follow the expansion of the bones of the pelvis, is as easily understood when we reflect for a moment, that this is an opening formed in the fascia transversalis, a membrane which is firmly attached to the ilium; and as this bone, in its growth to adult developement, expands and recedes from the middle line, it of course carries outward with it the fascia transversalis and internal ring above mentioned.

Thus, then, to repeat what I have above stated, it is manifest that as the internal ring, up to the adult period, is always passing outward, while the external abdominal ring remains permanently fixed to the pubis, there is in the nature of the parts, and in their progressive developement, a tendency to render the inguinal canal long, its course and openings oblique; its condition thus becomes as it were valvular. It is upon such views of the actual anatomy of the parts I ground my hopes that a radical cure in the case of this little patient will follow the habitual use of a well adjusted truss.

ON CONGENITAL ENCEPHALOCELE, &c.

Having introduced the subject of congenital hernia, I will take this opportunity of adducing a few observations upon congenital hernia from the cavity of the cranium. The protrusion in this case may consist of a portion of the cerebrum, the cerebellum, or of both, with their membranous investments. Some

have thought it important to designate by different terms the tumour as constituted by the brain or cerebellum; but any observation I have to make upon the subject of hernia, occurring in this region, may be simply comprehended under the term of *Congenital Encephalocele.*

This affection is fortunately rare; yet have I known, within these few years, five cases of it; three of these individuals died soon after birth, and two still live, and have afforded me opportunities of observing the characters of the complaint, and of noting its progress.

The cases of congenital encephalocele recorded by medical writers, are very few; but some of these are calculated seriously to impress the surgeon with the importance of having present to his mind the characteristic features of this complaint; as from these examples we learn that the death of his patient may be the consequence of the formation of a hasty or incorrect diagnosis.

Lallemand, of Paris, in a spirit of candour which cannot be too highly extolled, informs us, that in the year 1813, he admitted under his care into an hospital in Paris, a girl aged 23 years; she had a tumour about the size of a small hen egg, which projected from the back part of the occipital region. It was rather soft, moveable, indolent, and pressure on it, gave the patient no uneasiness; it was sustained by a narrow neck; in a word, it presented the ordinary characters of a wen. Having decided upon an operation to remove the tumour, he circumscribed the basis of it by a circular incision; this exposed a membrane, which, from its brilliancy and fine white colour, he suspected to be dura mater; and upon examining the tumour more particularly, he found that it passed out from the cavity of the cranium by an opening in the occipital bone. Having thus discovered his error, he proceeded, of course, no further with the operation. But the inflammation of the exposed membrane, and even of the substance of the contained and protruded portion, which proved to be the cerebellum, caused in eight days the death of his patient. The post mortem examination shewed

that the hernia was enveloped by the dura mater, which was pushed through an opening in the occipital bone, and contained an elongated portion of the two lobes of the cerebellum.

M. Bafos, Surgeon to the Hospital des Enfans in Paris, met with a case of tumour projecting from the occipital bone, presenting all the characters of the former case; and the patient having died some time afterwards, the examination of the head proved that the tumour, by its situation, its volume, and its composition, differed in nothing from that reported by Lallemand.* The congenital encephalocele, although seen usually to protrude from the occipital region, has been observed in different situations of the cranium. Moreau lately presented to the Academy of Surgery in Paris, an infant affected with an encephalocele, about the size of a walnut; the tumour was situated above the root of the nose, and appeared to have come out through a separation between the two pieces of which the fœtal frontal bone is composed. And J. Cloquet has met with a case where the hernia passed out by the posterior fontanelle. It was very narrow at its basis; the convolutions of the displaced portion of the brain had entirely disappeared, so as to form the parietes of a great cavity, filled with transparent serum, and which commmunicated by a narrow canal with the left ventricle. The child died immediately after it was born. It appears also, that Guyenot† presented to the Academy of Surgery in France, in the year 1774, a man affected with an encephalocele in the forehead, who had attained the age of 33 years, and whose intellectual functions had never been in the slightest degree impaired. In the 7th volume of the Medico-Chirurgical Transactions of London, Mr. Earle alludes to the few examples of this affection he has either seen or heard of; he describes two of these interesting cases under the head of hernia of the dura mater, and has recommended a plan of treatment to which I

* Traité des Maladies Chirurgicales, par M. Le Baron Boyer, vol. v.

† Dictionnaire de Medicine, tom. septieme.

shall shortly have occasion to revert. At the conclusion of the history of a well marked instance of this affection, he mentions the following startling fact: "In a similar case, which a medical man mistook for an encysted tumour, and which he suddenly removed, death instantly ensued."

Such are the cases I find recorded of the congenital encephalocele, and the careful study of them shews us the importance of our being, familiar with the external characters, and the pathological anatomy of such tumours, and cautious in our diagnosis. The symptoms of the congenital encephalocele in all the cases I have seen, have been well marked, and the diagnosis easy. From whatever part of the contour of the cranium, the tumour which constitutes the hernia projects, it is of an oval or spheroidal form, soft and colourless. It is attended with pulsations synchronous with those of the heart. These pulsations, when the patient is at rest, are sometimes indistinct, but are rendered very manifest both to sight and touch on the slightest exercise. The patient, when old enough to be able to give us an account of himself, says he never feels any pain in the tumour; if an infant, he seems to suffer no uneasiness, even when the swelling is subjected to gentle pressure: the size of this tumour is momentarily augmented by the efforts of coughing, sneezing, or even crying; during any respiratory effort, a blush of redness is seen rapidly to pass over it, through the skin, which is generally thin, and semi-transparent where it covers the hernia. On carefully applying the fingers around the base of the tumour, the borders of the opening in the cranium, through which it has escaped, are easily felt, sometimes these borders are smooth and even; but I have in one case found them offering rough and elevated edges.

The intellectual faculties in all the cases I have witnessed, at a period of life when these could be estimated, remained entirely unimpaired.

If, however, we expect to find the hernia in all cases so

clearly marked as these characters here laid down would lead us to suppose, we shall be in danger of deceiving ourselves; and the interesting case communicated by Lallemand, in which the tumour was mistaken for a wen, may convince us that this complaint does not always present the same decisive symptoms. It is to be recollected, however, that in his case, the patient had attained the age of 23 years; and it is by no means impossible, but that the gradual contraction of the bony ring, through which the hernia had protruded, may have given the swelling the appearance of a wen, attached by a narrow neck, and at the same time have gradually obscured the other signs above alluded to, such as pulsation, motion from respiration, &c.

With respect to the situation of the tumour, it might be supposed, that we should generally see the congenital encephalocele in the course of the sutures of the cranium, or at some of the fontanelles, which yet exist at birth; a conjecture which would seem to be supported by authors who have described this disease, and one which it is feared may have contributed to serious errors. The truth is, that this form of hernia does, no doubt, *sometimes* occur at some one or other of the fontanelles; but it is far more frequently seen to protrude through some one point of the median line of the occipital region, where at birth no fontanelle ever exists; again, the surgeon is in danger of being deceived in his diagnosis if he expects to find the tumour presenting the same uniform characters at all periods of its developement.

At birth the tumour is tense, shining, has a transparent appearance, and gives to the touch a distinct sense of fluctuation; while in the adult the prominence is softer, and the water it contained has been removed; the pulsation, motion from respiration, and other characters, are not by any means so distinctly marked.

My observations, then, of this complaint, at birth, in the adult, and during the intervening period, lead me to say, that

during the infantile period, the tumour contains a considerable quantity of fluid, and that if it be situated at the posterior part of the head, it will be found accurately to resemble a spina bifida: as the child grows up, the water is absorbed, the tumour becomes more irregular, the convolutions of the brain are faintly traced through the thinned scalp, which is here generally deficient in hair; and although it now more resembles an encysted tumour from the narrowing of its neck, still, as far as I have seen, the least attention will be sufficient to impress the surgeon with the conviction of the true nature of the complaint. The encephalocele and spina bifida bear the closest analogy to each other, and may be arranged in the same class of congenital defects, or "arrests of developement." As spina bifida frequently co-exists with water in the brain, so also with the encephalocele, hydrocephalus is generally combined. The prognosis, however, in hernia of the brain, were I to speak from what I have seen, I would consider more favourable than the former; certain it is, we have cases recorded of encephalocele, in which it is mentioned that the child was born alive, but after a few convulsive movements expired (and it is only surprising that the pressure which the brain and the exposed tumour must suffer at birth, does not always either produce death immediately, or lay the foundation of an inflammatory process terminating after a few days or weeks in that event); but these first dangers passed, the patient afflicted with an encephalocele may survive for many years.

Among the cases of congenital hernia of the brain or cerebellum which I have met with, I have not seen any instances of paralysis of the upper or lower extremities; and the dangerous consequences to be apprehended are chiefly confined, as I have already mentioned, to the early period of such cases. Hydrocephalus in these examples almost uniformly exists; over-distension and ulceration of the hernial sac, with its exhausting consequences, are to be dreaded; so that, upon the whole, our prognosis must be very unpromising.

Anatomical Characters of the Congenital Encephalocele.—The chief bulk of the tumour which constitutes the hernia will be found to be formed of brain or cerebellum, and if examined, soon after birth, to be of a soft consistence, the convolutions flattened, and the whole structure infiltrated with water. The hernial sac is constituted by dura mater protruded before the brain, and lined internally with arachnoid membrane, fortified externally by that structure which in the perfect cranium constitutes its proper periosteum.

As the hernia usually occurs in some part of the region of the cranium invested by the occipito-frontalis muscle, this ought in general to constitute one of the coverings of the hernia; but in some cases it is either not developed, or is in so attenuated a condition, that its existence may well be doubted; lastly, the scalp forming the outer covering of the hernia, is, as I have uniformly observed, nearly destitute of hair, a circumstance which at first sight gives the tumour much the semblance of a wen, and may have contributed to the fatal errors in diagnosis which have been noticed.

The herniary tumour further investigated will be found to have protruded through a bony ring in some one portion of the cranium; in one case, I have observed the tumour to project through the right portion of the os frontis. In general the deficiency in the bones, (like most cases of congenital defects or arrests of developement in other parts of the body), will be found to occupy the middle line of the cranium. As far as I have remarked, the hernia does not occur most frequently in the usual situation of the fontanelles, although no doubt it presents itself generally at some point where in the early weeks of fœtal development, no bone exists. Thus has it been seen at the root of the nose, where for some weeks a deficiency intervenes between the nasal processes of the frontal bones; but by far the most frequent situation for the tumour appears to be some one point in the middle line of the proper occipital portion of the os occipitis.

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Fig. 1.

Occipital Bone, at Birth.

A. The Cuneform process, B.B. The Condyloid portion. C. The proper Occipital portion.

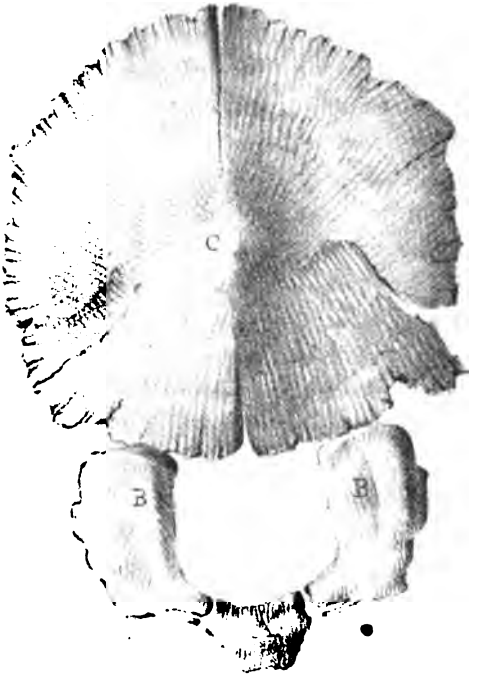


Fig. 7

left half of the proper occipital portion *at the 9th week of* intrauterine *growth magnified showing the spongy cellular appearance of the bone at this period*

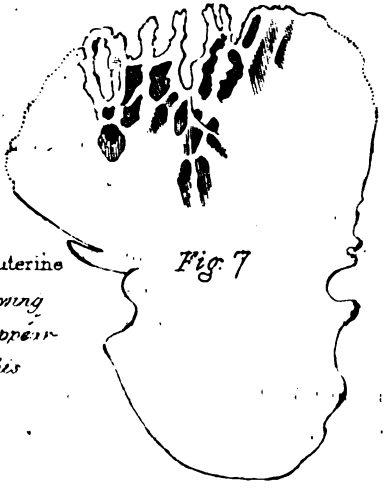
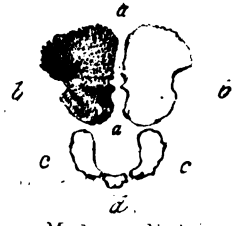


Fig. 7

Fig. 2.

The Occipital bone 9th week of intra uterine growth.



a. a. Median division

b. b. Two Lateral parts of the proper occipital portion

c. c. The Condyloid processes

d The Cuneform process

Drawn from Nature and on Stone by William Lover

Allens Lithog 16 Trinity St.

Although the causes which preside over these congenital defects are totally unknown, it may be somewhat satisfactory to refer to the anatomy of the os occipitis, and of the brain itself, for the first eight weeks of intra-uterine life, as from such an investigation some little light may perhaps be thrown on a matter so obscure. If we merely confine our observation of this bone to its state at birth, we shall be at a loss to account for the occurrence of hernia in the middle line. At birth the occipital bone seems to have been formed of four or five principal pieces, which circumscribe the foramen magnum, viz., the cuneiform process in front, the condyloid portions at each side, and the proper occipital portion posteriorly. It is this last we have principally to consider with reference to the anatomy of the bony ring through which the encephalocele protrudes. This proper occipital portion of the bone is itself early developed from four centres of ossification, which, about the third or fourth month, unite at the proper occipital tuberosity, leaving a fissure above and below this rudimentary protuberance; if, however, we examine the bone about the eighth or ninth week of intra-uterine life, we shall find that this occipital portion, instead of four, now consists but of two, equally divided into lateral portions, from the point of the posterior fontanelle to the foramen magnum, by a perfect median division. (See Fig. 2). It is at some one point of this *median division* that the occipital hernia protrudes, so that although the congenital encephalocele does not always occur at the usual fontanelles, still it will be found invariably to correspond to some one point where, during the first eight or nine weeks of intra-uterine growth, membrane supplies the place of bone.

Although the cerebrum and cerebellum may be of their natural size, the cranium frequently appears smaller than usual; the sutures are remarkably close, and even as early as birth, the fontanelles are completely closed up. It is scarcely necessary to mention, that although the brain may be of its ordinary volume, a considerable portion of it is lodged in a new and

yielding sac formed by the scalp and dura mater; the bony cavity accommodates itself to the diminished quantity of brain it has now to contain; hence the sutures close in, and the bregmata disappear, as these provisions for the growth of the encephalic mass in natural circumstances become, under the existing state of things, now superfluous, and, like other provisions in the human body, cease to exist when they are no longer likely to be useful.

Treatment.—With respect to the treatment of this affection, I regret I am obliged to observe, that the result of my experience has not given me any confidence in the plan generally recommended by authors. The nature of the encephalocele, and the analogy it bears to other herniæ, must have at once suggested to the mind of the surgeon methodical pressure as the means of cure. This appears to have been tried, and in the few cases recorded, to have been almost exclusively relied on.

We learn that Calisen has many times experienced in his practice the good effects of pressure in cases where the tumour was small; but he confesses his belief, that when the hernia is large, compression will not only be unavailing, but that it may even be attended with serious consequences.

Salleneuve has communicated to the Academy of Surgery in Paris, a case which would seem to prove the good effect of this treatment. This surgeon, consulted in a case of congenital hernia of the brain, about the size of a small hen-egg, which was situated towards the posterior and inferior angle of the parietal bone, applied upon the tumour a thin plate of lead, which was pierced at its borders, so as to allow of its being sewn into the infant's cap. The tumour subjected, it is said, to the gradually increasing pressure from a bandage, and the leaden plate by degrees diminished in size, and ultimately fell to the level of the cranium; and the progress of ossification completing the lambdoid suture the complaint was permanently cured.

Notwithstanding these strong evidences in favour of the plan by compression in this species of hernia, I must state that in my

experience, I have found pressure, no matter how modified, inapplicable in the first stage of the complaint, and in the latter stages useless. In those cases, the treatment of which I have witnessed early, the danger in general was to be apprehended from hydrocephalus, or from the spontaneous rupture of the hernial sac and its consequences. In such cases I have found the skin covering the tumour thin, red, and transparent, and ready to give way by ulceration. The idea of attempting to use pressure here never could be contemplated by the surgeon witnessing the actual state of the tumour. Lastly, pressure in the second stage of the complaint will, in my opinion, be found useless, because the head is comparatively small, the sutures are closed, and the cavity of the cranium has contracted itself to dimensions merely sufficient to contain a diminished quantity of brain and cerebellum, while the undilatable bony ring through which the hernia has passed, will be incapable of admitting the tumour, even supposing that the cranium were sufficiently capacious to accommodate the protruded hernia.

From the close analogy which exists between the congenital encephalocele and the spina bifida, it might be conjectured that the same principles which direct the surgeon in the treatment of one disease should also guide his practice in the management of the other. It is well known to the profession that many years ago Sir A. Cooper succeeded in curing a case of spina bifida by frequently puncturing the distended sac by a fine needle, and by the use of gentle and moderate pressure afterwards; the same treatment (though very rarely, it must be confessed) has also succeeded in other hands, and we find that Mr. Earle has, though unsuccessfully, adopted the same mode of proceeding in a case of congenital encephalocele, the disease which it is the object of this paper to consider.

Most of the continental surgeons condemn the plan of treatment of the spina bifida by puncture, as most dangerous, and *a fortiori*, it is to be presumed, are against its use in the treat-

ment of congenital hernia cerebri. For my part I can state, from what I have myself seen, that the operation of carefully puncturing the distended sac of the encephalocele, so as to allow the limpid fluid to escape, but to admit no air, is not by any means a dangerous operation. If this puncture be made in a healthy part of the integuments of the tumour, it may be expected that the little wound will heal up immediately, the skin shall acquire thickness and strength; and although the fluid may accumulate again and again, the same simple operation may be safely resorted to. I feel satisfied that although this plan may not always succeed in curing the encephalocele, still that it is a mode of proceeding which offers to our patient the best chance of his being rescued from the effects of the spontaneous ulceration of the sac, from which, once permitted to occur, fatal consequences are to be apprehended.

Although I have thus stated my opinion, founded on experience, that such a plan of treatment is safe, and even may be successful, I would not be understood to advise that the plan of puncture be resorted to, except as a means of preventing worse consequences. There are occasionally cases to be met with, one of which I shall just now mention, which seem to be indolent, and demand no interference on our part. These cases no doubt are rare. Upon the whole, then, the indication in the treatment of the encephalocele would appear to me to be, to promote, as far as lies in our power, a healthy condition of the integuments; we should endeavour to fortify the skin by astringent applications of oak-bark and alum; but should the water go on accumulating, and at all threaten the over-distension and ulceration of the skin, I would not delay the operation of puncturing the tumour according to the plan recommended in the treatment of the spina bifida. The skin, after repeated operations, becomes thicker, stronger, and better able to resist the distension; and as the child grows older, it is probable that the disposition of the membranes of the brain to form water will gradually decline, and the congenital hydrocephalus subside. I feel more confi-

dent in advising the opening of the distended hernial sac, when I reflect that the operation of puncturing the same membranes has been practised with success in chronic hydrocephalus.

Surely, then, it will be inconsistent in surgery to approve of the operation of tapping the membranes of the brain for the cure of hydrocephalus, when the indications for such a proceeding are obscure, and the opening must be made through the bones of the cranium, and to reject the proposal to puncture these membranes, when there is evidence before us both to our sight and touch of their being much distended, and while at the same time they are quite accessible to our simplest instruments. The advocates for the treatment of the hernia by pressure, may be disposed to combine the plan with that above recommended, of puncturing the sac. In one case, after the evacuation of the fluid by a puncture of the hernial sac, I tried the effect of pressure methodically applied by straps of simple soap plaster and a light bandage; but in this case convulsions set in, and the bandage and plaster, as may be supposed, were speedily removed, never to be renewed.

In the second stage of the complaint, the only indications appear to be, to preserve the tumour from external violence.

The medical treatment of these cases is not to be lost sight of. It is to be remembered that, in almost all of them, congenital hydrocephalus exists. True it is, this complaint seems to be deprived of its worst characters, a circumstance which perhaps may be attributed to the impossibility there exists of pressure being to any great extent exerted on the brain, in consequence of the secreted fluid being permitted to exhaust its pressure on the hernial sac, which gradually yields to it. Whether any specific mode of internal medical treatment might be successfully resorted to, to remove the hydrocephalus, or not, I cannot take upon myself to decide. All I have found it right to attend to, in the medical management of such cases, as fell under my care, was to adopt such suggestions as the nature of the alvine discharges and general constitutional symptoms indicated.

Cases.—The first case of the congenital encephalocele I had an opportunity of witnessing, had been under the care of my friend Dr. Macabe. The head of the infant was the smallest I have ever seen; the forehead was depressed, and a tumour as large as an orange projected downwards and backwards from the occipital region. The chief bulk of this tumour was evidently formed by a fluid, as upon examining it, a distinct feeling of fluctuation was communicated to the fingers. The child for several hours after its birth seemed in a languid, dying condition; its respiration slow and imperfect; Dr. Macabe made a small puncture into the tumour, and a considerable quantity of limpid serum flowed out; after which the infant seemed to emerge from a state of stupor, its pulse became perceptible, it took some little nourishment, the puncture at once closed, but the child survived only nine days.

Upon dissection, I found that the sac (formed of dura mater) contained the entire of the cerebellum, and a great part of both posterior lobes of the cerebrum. These organs were softened, infiltrated with water, and surrounded with a quantity of limpid serum. The cranium of the child is now before me, and it certainly is the smallest I have ever seen; it is delineated in engraving No. 3, exactly of its natural size. The measurement from before, backwards, is only three inches; its greatest transverse diameter, two inches and one-eighth; its greatest vertical height, taken from the anterior part of the foramen magnum, is one inch and a quarter. From the elevation of the sella turcica above the level of the rest of the basis cranii, and the very small expansion of the frontal bone, the space allotted by Gall and Spurzheim for the accommodation of the intellectual organs, was circumscribed within narrow limits. The facial angle is so acute as not to amount to more than thirty-two degrees.

The calvarium is thin, but of a firm, dense structure; and it is remarkable, that all the bones of the cranium touch in the whole line of the sutures; at no point is there any thing like a fontanelle interposed between them. Thus, when we examine the occipital bone, we find its *circumference* joined as in the

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Fig. 4

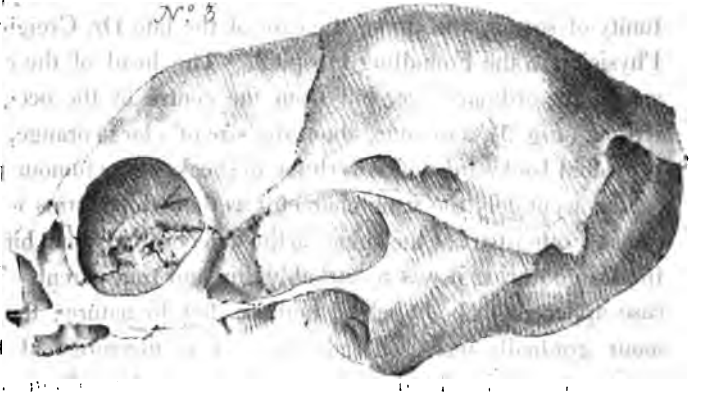
A. Cuneiform process

C. Foramen through which the hernia protruded.

B. Foramen Magnum

D. Carotid Foramen very small

No. 5



Drawn from Nature and on Stone by William Lover

W. Allen's Lith: 10 Trinity St.

perfect cranium to all the surrounding bones; laterally, the traces of the original division of the bone into five principal pieces are yet observable. When we examine the bone along the *middle line* of the basis cranii, (*Fig.* 4), we find the cuneiform process is nearly vertically directed, and that it is joined as usual to the body of the sphenoid. The superior posterior angle of the occipital is perfect where it touches the termination of the sagittal suture, and continuous with this last for about a quarter of an inch; a short suture joins the two lateral portions of the os occipitis itself. Between, then, these two extreme points of this bone, namely, the cuneiform process in front, and superior angle behind: the occipital bone, on the middle line, is cleft by a large, elongated, oval hiatus, two inches in its greatest diameter; it measures transversely nearly an inch in some parts. This hiatus, in the recent state, was divided into two by a membrane; the anterior division was the proper foramen magnum occipitale, and the posterior larger aperture, with defined margins, was the bony part of the ring, through which the encephalocele had protruded. To make this description intelligible, I must refer to the figures, Nos. 1 and 3, of the skull; the original is preserved in our museum in the Richmond Hospital School of Medicine.

The second case of hernia cerebri which I had an opportunity of seeing, was under the care of the late Dr. Creighton, Physician to the Foundling Hospital. The head of the child was of the ordinary size, but from the centre of the occipital region, (*Fig.* 5), a tumour, about the size of a large orange, was projected backwards, and overhung the neck. The tumour presented accurately the same character as that which forms in the loins or other part of the spine, in the defect called spina bifida; the skin covering it was remarkably thin and transparent. The case appeared to be hopeless, and was left to nature; the tumour gradually increased, gave way by an ulceration at first minute, but which by degrees extended. A clear albuminous fluid escaped, and the constant draining of it, moistened all the clothes of the infant; soon its strength became exhausted, and

at the termination of the seventh week, it died convulsed. The head was removed at the fourth cervical vertebra, and is preserved entire in the museum of the College of Surgeons. No dissection of the brain or membranes was performed. See drawing.

Although I have, in speaking of the treatment of the congenital encephalocele, argued the propriety of having recourse to the operation of puncturing the tumour, and letting out its fluid contents; and the case just related would seem to shew that little is to be expected from the unassisted efforts of nature, where hydrocephalus is combined with the hernia; still I would not wish to be understood to recommend the surgeon to have recourse to the operation above alluded to in every case of congenital encephalocele. Occasionally he may meet with cases of this complaint, where the tumour seems quite indolent, and composed of nothing but the brain and its membranes, in a healthy condition, and the integuments covering it of the natural colour and consistence. Of course, in such cases as this, it might be justifiable to make a fair trial of pressure, but any more active interference would be unwarrantable.

I have had under my observation for many years, in this city, a lad who is now 20 years of age, (*Fig.* 6), a broad, flat tumour, with a rounded and uneven circumference, occupies nearly the whole of the right half of his forehead, and extends to the temporal fossa of the same side, hideously deforming this side of his face. The roof of the orbit, and superciliary arch, is at the same time obliquely depressed to a considerable degree. The eye has been greatly distorted from the middle line, and from the gradual pressure it has sustained from the tumour, opacity of the cornea, complete loss of vision, and even partial atrophy of the organ, have been the consequence.

The swelling has a very unequal surface, owing, as it were, to the convolutions of the brain. A rugged uneven ridge marks the edges of the bony ring, through which the hernia protrudes. The centre of the swelling has a soft, unresisting feel, and it has a pulsation in it synchronous with the action of the heart. Dur-

Fig 5

To face p

Drawn on Stone by William Lover

Allen Lith 16. Trinity St

A. THE HERNIA

Fig. 6

To face the back of drawing

Drawn from a Cast and on Stone by Wm Lover

Allen's Lithog 16 Trinity

A. THE HERNIA

ing any respiratory effort, such as coughing or sneezing, an impulse is communicated to the tumour; in a word, it presents most of the characters assigned to the congenital encephalocele in the second stage. In this instance, however, the neck of the tumour is broad, the skin is thick and pale. Whether at an earlier period than I had an opportunity of seeing it, there were any evidences of hydrocephalus or water in the hernial sac, could not be ascertained; upon inquiry, all I could learn from the mother of the lad, was, that he was born with this defect, and that he was a healthy child, and never suffered any inconvenience from the tumour, except that we were to refer the loss of the eye to its pressure.

About seven years ago I had a cast taken of this boy's whole visage, which of course includes the tumour, whereby I am now enabled to contrast its present form and size with its former dimensions; the result of the comparison is, I find that while the lower part of the face is increased in size, the forehead and hernia have undergone no sensible alteration. The boy's intellect never was affected.

I will now conclude these observations by giving a detailed account of a case, which shall be the second on record, in which the plan of frequently puncturing the tumour, and evacuating its fluid contents, as recommended in the treatment of the spina bifida, has been extended to the congenital encephalocele; and the first, as far as I know, in which this practice has been attended with success.

A. B., aged six years, is a healthy looking little girl, of a muscular frame; her countenance is not unpleasing, although it is somewhat disfigured by both her eyes being affected with strabismus.

The forehead, and whole of the head even to the centre of the occipital region, is remarkably well shaped; but a little below the tuberosity of the occipital bone is observed a tumour, about the size of a hen-egg, placed transversely; it stands out from the parts which appear to afford it attachment, yet is in-

clined downwards and backwards towards the neck; at a first superficial view, its size, its narrow neck, and deficiency of covering from hair, (if it were not from the age of the patient), would give one the idea, that a common wen had originated here; but a closer examination teaches, that the tumour has a pulsatory motion in it, synchronous with the beatings of the heart; that it is influenced and increased even in size by coughing and sneezing, which give to it an impulse or shock, during which the whole tumour becomes momentarily suffused with a sudden blush of redness. It communicates to the hand examining it, a soft, woolly feel, and gentle pressure does not give the patient uneasiness; the tumour, where connected to the head, is narrow, and when gently raised up, and its neck is viewed from below, there is an evident puckering of the skin, which denotes a narrowing of the bony ring, through which the hernia has, as it were, protruded. The edges of this opening in the occipital bone are well defined and easily felt through the integuments.

The skin enveloping the tumour is thinner in some parts than in others, and somewhat transparent. The whole surface of the hernia has an uneven aspect, just as if the convolutions of the brain caused these inequalities, and that the two posterior lobes of the cerebrum form the chief bulk of the protrusion, seems evident from the position of the tumour, and the even, vertical depression, which divides it into two equal lateral portions. The head is otherwise complete in its form; the fontanelles have been long since completely closed.

I saw this child very soon after its birth, in consultation with Dr. Labatt, Surgeon Martley, and Mr. Crampton, the Surgeon General; and at that period, the tumour was as large, and possessed nearly the same form, as it does at present. The skin, however, was redder, more transparent, and in many points so thin, that it appeared ready to burst and give exit to a pellucid fluid which it evidently contained. In a word, it possessed all the characters of the tumour so often seen in the lumbar region,

called spina bifida. The child was healthy, but the prognosis given was unfavourable, as we much dreaded, that the watery fluid the swelling contained, would soon make its exit by an ulcerated opening in the integuments, which should admit air, and be of course followed by inflammation, and a train of consequences too exhausting, for the slender constitution of such an infant to endure.

As the spontaneous bursting of the distended sac at the thinnest part of the tumour seemed inevitable, if it were left to nature, it was agreed that it would be more prudent to anticipate such an event, by making a timely puncture by means of a small needle into that part of the tumour which was covered by the thickest and soundest integument, and consequently into a part of the skin most likely to heal speedily after the fluid contents of the hernial sac were evacuated.

This was accordingly done, and about half an ounce of clear fluid escaped; the sac now became flaccid, and a tumour, the size of a walnut, evidently formed by the posterior lobes of the cerebrum, was found to form the principal part of the protrusion; the small wound was carefully dressed, and the child kept perfectly quiet. No unpleasant symptom whatever followed this trivial operation. The next day, however, to our mortification, the tumour was just as tense and shining as before, and after a few days, the puncture was again repeated, and with a similar result. In short, this little operation was performed on this child seven times with a fine needle, and once only with a lancet, and on this occasion alone did the operation *itself* seem to be followed with any fever or unusual restlessness in the infant. Once, however, after the effectual evacuation of the swelling by a simple puncture, it was deemed prudent to give a fair trial to the effects of pressure, which had been so much extolled by Salleneuve. On this occasion pressure was effected by means of adhesive straps of soap and diachylon plaster, and a tight bandage; but convulsions came on in the night, and bandages and pressure were then removed and were never afterwards re-applied.

Under the simple treatment by puncture, the limpid fluid was frequently evacuated, the skin gradually became thicker and better able to support the distending force of the fluid, and as the child grew older, and the brain became consequently firmer, and its membranes less disposed to watery secretion, the intervals at which it became necessary to resort to the operation of puncturing, became longer; finally, the quantity of water was so trifling, that the operation became no longer necessary. The bulk of the hernia, however, was not diminished by the disappearance of the fluid, for the solid part of the tumour was formed of the brain itself, and probably a small portion of the cerebellum remained behind.

Some may feel disposed to think that this was a child with remarkable vigor of constitution, and that if it had been left to nature, the complaint might have remained inert, as in the case before mentioned in these pages.

As I felt great interest in the fate of this little child, I watched the progress of the case narrowly; and of this I feel satisfied, that if the tumour had been left to nature, it would have gone on gradually increasing in size until the thinnest part of the sac gave way by a fatal ulceration; I say fatal, because such an accident is so considered by all authors who have written on the analogous case of spina bifida, and which, in my own experience, I have found equally mortal in the congenital encephalocele.

The repeated and timely punctures in this case kept the disease from progressing until the child arrived at that state of developement, when the brain and its membranes became less disposed to watery secretions, and the powers of the constitution enabled the infant to provide a stronger skin capable of sustaining the weight of the hernia.

Mr. Colles and I have examined this child within these few days; its bony and muscular frame are well developed; it is remarkably intelligent, and all its functions are performed with regularity.

ART. XXI.—*Miscellaneous Contributions to Chemical Science.* By ROBERT JOHN KANE, M. R. I. A., Professor of Chemistry to Apothecaries' Hall, Corresponding Member of the Society of Pharmacy of Paris, and of the Society of Medical Chemistry, of the same city.

No person engaged in the actual operations of chemical research, can avoid, if he be possessed of any tact of observation, reflecting on the numerous phenomena that he shall meet with, which, although too easy of formation, and produced under circumstances that occur too often to allow him to consider them as not having been seen before, are yet not described by authors, and he is consequently left for any information that he may wish to gain concerning them, to the exercise of his own analytical skill to determine their composition, and of his own ingenuity to account for their appearance.

If all who have observed such phenomena had described them even in a general manner, great advantage would have been gained. We should be in possession of an immense number of facts which now, although probably known, a few to each individual engaged in chemical research, yet not being generally known, cannot be brought to bear upon any of those great problems, the solution of which forms an era in the history of science, probably in the history of mankind, and confers immortality upon the solver.

In a science like chemistry, a science of observation, it is of paramount importance that all facts should be recorded: one should not be excused on saying, I do not see the application of this fact. When the early analysts published their results, they had no idea of the constancy of relative proportion solving the problem of the constitution of matter. When Bergman constructed his coarse tables of affinity, he did not even dream of establishing the order of negative or positive energy. Let those

therefore who observe facts communicate them, and probably their application may be made by our successors in the field.

Acting upon this principle, I have collected some observations on different chemical subjects, which not being, separately, sufficiently voluminous, or probably even important, to be the subject of a formal memoir, are yet, in my opinion, of sufficient value to be laid before my co-labourers in this splendid field, whose talents and assiduity may enable them to develope those investigations to an extent suited to their value.

COMPOSITION OF THE BLOOD IN JAUNDICE.

My friend Dr. Corrigan having transmitted to me a specimen of blood taken from a woman labouring under jaundice, I undertook the analysis in order to verify the researches of Lecanu, and some analyses made by myself at a former period.

The blood had separated perfectly, the clot, not buffed, lay soft and loose at the under surface. The superficial arterialization was very imperfect (the vessel had been close air-tight by bladder).

The serum was of a deep yellow colour, browned turmeric paper, was salty to the taste, and when mixed with muriatic acid became vivid grass green in colour. Sp. gr. 1029.25.

The quantity of blood sent to me weighed 3168 grains, consisting of—

Serum - - - -	1420
Clot - - - -	1748

A quantity of serum having been carefully dried, was found to consist of—

Water - - - -	893.1
Solid matter - -	106.9
	1000.0

A quantity of clot having been dried, was found to be composed of—

Water	656
Solid matter	344
	1000

The salts were found by appropriate re-agents to be present in their natural proportion. Their quantitative estimation was not, in the future steps of the analysis, attempted.

The dried serum having been reduced to very fine powder, was boiled in dilute alcohol, and afterwards in very strong alcohol. The alcoholic solutions were mixed together, and very much concentrated. They deposited successive crops of common salt, and were alkaline. They were finally evaporated to dryness.

The dried serum, when it ceased to yield any soluble matter to boiling alcohol, was weighed and estimated as *albumen*.

The dry residue of the alcoholic solutions was digested in cold ether, which dissolved most of it, and assumed a gold colour. The undissolved matter was boiled in a small quantity of alcohol, which dissolved it, and on cooling deposited flocculi of *phosphuretted fat*. The ethereal solution, when evaporated, gave a residue of the *yellow biliary colouring matter*, and an *oily liquid* which floated quite separate from it (*oil of Bibington*).

The clot was washed with water carefully until the *fibrine* remained white; it was then carefully dried and weighed.

The liquor in which the clot had been washed was heated to 200°; the mixture of *albumen* and *hematosine* coagulated, and the quantity of the former having been gotten by calculation from the quantity of water that existed in the clot, as serum, and added to the albumen before obtained, we have the entire quantity of *albumen* in the blood, and the residue gives of course the *colouring matter*.

In former analyses of the blood in disease, I usually incinerated the hematosine in order to determine the quantity of oxide

of iron that I could obtain. But as the iron exists in the hematosine, not as oxide, but probably as an ultimate constituent, and is consequently proportional in quantity to that of the hematosine, I do not now think it necessary to determine its amount separately.

The quantitative results of the analysis are as follows:—

Water	762.28
Albumen	71.4
Fibrine	2.8
Hematosine	126.7
Phosphuretted Fat, Oily matter and yellow colouring matter	2.0
Salts, loss, &c.	34.82
	1000.00

This analysis fully confirms the result of Lecanu as to the existence, in the blood of jaundiced patients, of the yellow colouring matter of the bile, and also as to the absence of cholesterine. In consequence of this latter principle being often a constituent, in minute proportion, of healthy blood, I sought for it carefully, but could not detect any trace of it. My results, however, differ in an important relation from those of Lecanu; he found that the quantity of colouring matter was less than in health; in the foregoing analysis it is very nearly the exact healthy average. I am not inclined to attribute great importance to the difference between our results in this respect, as the quantity of that principle varies in health between limits extending beyond both.

THEORY OF THE ETHERS.

Dumas and Boullay had determined that in the ethers the carburetted hydrogen might be regarded as a base similar to ammonia; they even contrasted in a table its properties to those of ammonia, and shewed that in all the important characteristics

it was equally marked, and that but for the accidental circumstance of its insolubility in water, its alkaline nature would have been long since recognized. Having devoted some attention to the ammonium theory of Berzelius, in which he regards an atom of hydrogen as converting the ammonia into a substance possessing many properties in common with the metals, I was induced to try whether the same simplicity of arrangement and classification which was given to the ammonia compounds by that hypothesis, could not be afforded to the different combinations of the ethers by the assumption of similar principles. Let us consider the base of the ethers as being, not olefiant gas, but, as Thompson proposed, the isomeric liquid, whose formula is (4 C + 4 H); denote by the name of *ethereum* the hypothetic body formed by its union with an atom of hydrogen, (as Berzelius terms the compound of ammonia + an atom of hydrogen, *ammonium*;) and see the expressions for the composition of some of the most interesting of these bodies.

Sulphuric ether (oxide of ethereum) = (4 C + 4 H) + H + O.

Alcohol (hydrated oxide of ethereum) = ((4 C + 4 H) + H) + O + H.

Muriatic ether (chloride of ethereum) = (4 C + 4 H) + H + Ch.

Hydriodic ether (iodide of ethereum) = (4 C + 4 H) + H) + I.

*Sulpho-vinic acid (bi-sulphated oxide of ethereum) = 2 $\dot{\dot{S}}$ + (4 C + 4 H) + H) + O).

*Hennell's oil of wine (sulphated oxide of ethereum) = $\dot{\dot{S}}$ + (4 C + 4 H) + H) + O).

The sulpho-vinates, as sulpho-vinate of potash, (double sulphates

---

* Hennell has not given water as a constituent of these substances; by the later researches of Wöhler, Liebig, and others, it has been proved to exist constantly in the atomic relation, corresponding to the view we have taken up.

of potash and oxide of ethereum) $(\dot{S} + \dot{K}) + (\dot{S} + (4\,C + 4\,H) + H) + O)$.

Nitrous ether (hypo-nitrite of oxide of ethereum) $= \dot{N} + (4\,C + 4\,H) + H) + O)$.

Oxalic ether (oxalate of oxide of ethereum) $= 2\,C + (4\,C + 4\,H) + H) + O)$.

Any one conversant with the subject will at once see how simply the above view accounts for the varied decompositions which occur in the production of these different bodies. I regret that the necessary brevity of this note prevents me from illustrating any instance in detail, for it would facilitate very much the comprehension of the subject. It is at once apparent that the different oxy-combinations of ethereum have been well studied, and that it is very probable that corresponding chlorine, iodine, &c. compounds exist, a few of which, as muriatic, hydriodic, and hydrosulphocyanic ethers, are already known. I had intended to enter into the developement of this subject myself, but want of time prevented me; the only experiments I made on it are a few, which I shall subsequently relate. I now bring the subject forward in order to direct the attention of those persons who are interested in the progress of chemical philosophy to it, that its truth or falsity may be, if possible, proved.

ACTION OF IODIDES ON HYDRIODIC ETHER.

Having seen, in the foregoing note, that the oxy-combinations of ethereum are known, I wished to try whether I could not form different iodine salts of ethereum, taking the iodide of ethereum as the iodine base, and various negative iodides as the acids. I had not time to follow up the subject, but I shall relate those experiments that I made, in order to shew the probability of the existence of these compounds.

1. A quantity of hydriodic ether (iodide of ethereum) was poured on the black iodide of platinum (first described

by me, Vol. I. of this Journal) and left for some days. The iodide of platinum was nearly all dissolved, and the ether had acquired the intense claret colour common to all the iodo-platinates.

When the combination thus obtained was allowed to evaporate spontaneously, it left a dark semifluid mass, deep claret-coloured, which, when heated, gave out first hydriodic ether, then iodine, and left metallic platinum.

When this combination is mixed with water, it separates totally from it, and remains under it as hydriodic ether alone would. The water having remained for some days in contact with it, became slightly coloured.

It dissolved totally in ether.

When this red combination was agitated with an aqueous solution of ioduret of potassium, the latter became deep claret-coloured; iodo-platinate of potassium was formed, and the ioduret of ethereum separated pure to the bottom of the solution.

When this iodo-platinate of ethereum was digested in a solution of ioduret of hydrogen (hydriodic acid), it was in the same manner decomposed; iodo-platinate of hydrogen being formed, and ioduret of ethereum (hydriodic ether) separated.

From these experiments, it appears probable that the ioduret of ethereum, being positive, unites with the negative iodide of platinum, and forms an iodo-platinate of ethereum. It is evident that this hypothetic base *ethereum* is less positive than hydrogen and potassium.

2. Colourless hydriodic ether having been poured on bin iodide of mercury, after some time became of a pure gold colour.

When this liquor is evaporated spontaneously, it yields beautiful and even moderately large crystals, of a splendid red colour; they were tables of four sides, varying to six or eight by the truncation of the opposite angles. They were permanent in the air, but decomposed when exposed to heat; when heated, they gave out iodide of mercury, some gaseous products, and a trace of carbonaceous matter remained.

When this yellow liquor is mixed with an excess of solution of ioduret of potassium, pure hydriodic ether separated, and the iodo-hydrarygrate of potassium existed in solution.

When this yellow liquor is decomposed by only a small quantity of ioduret of potassium, no hydriodic ether separates, but a yellow powder, of an amylaceous feel, is precipitated, and the liquor contains much mercury.

This yellow powder is insoluble in water or in alcohol; it is tasteless and totally inodorous; when heated it first gives out vapour of hydriodic ether, then a heavy yellow vapour, which crystallizes on the inside of the tube (iodide of mercury), some metallic mercury, and leaves a carbonaceous residue.

From these experiments, the natural inferences are, that biniodide of mercury, and ioduret of ethereum, combine in two distinct proportions, and form two iodine salts; the one, containing most of the negative element, can be obtained in fine red crystals, and the other, containing less, is found to be insoluble, and of a yellow colour.

The success of these few trials shows how very probable it is that an industrious investigation of the etherial combinations would lead to consequences important alike in a practical and in a theoretical point of view; and they render extremely probable the hypothesis which I have suggested, that, for example, we must regard hydriodic ether, which consists of one atom of hydriodic acid + two atoms of olefiant gas, as being an ioduret of a substance formed by the addition of the hydrogen of the hydriodic acid to the liquid corresponding to the two atoms of olefiant gas, just as we regard sal ammoniac as being composed, not of hydrochloric acid and of ammonia, but as being a chloride of a substance composed of the hydrogen of the hydrochloric acid united to the ammonia.

ACTION OF SULPHURIC ETHER UPON IODIDES.

In the memoir on the iodide of platinum, published July, 1832, I mentioned that ether had not any sensible action on it;

this I have since found to be incorrect, and I deem it necessary to describe the peculiar action of ether upon some iodides, including that of platinum.

1. When ether is digested upon iodide of antimony, it dissolves it, and by spontaneous evaporation we can get the iodide confusedly crystallized in needles. If we take the ethereal solution and evaporate it on the surface of water, the water contains much hydriodic acid, and oxide of antimony separates.

When sulphuric ether is digested on iodide of platinum, it dissolves a small quantity of it, and assumes a red colour; when this solution is evaporated on the surface of water, the water contains much hydriodic acid, and a black powder, aggregated in spongy masses, collects on the surface of the water; bubbles of gas separate from it, and after some time it falls down; it is then found to be metallic platinum. Probably, as in the case of iodide of antimony, where water was decomposed, and hydriodic acid and oxide of antimony formed; oxide of platinum is formed here in the first instance, but immediately decomposed, oxygen separating, as we have seen, in the gaseous form, and metallic platinum finally subsiding.

Ether does not appear to have any action on bin-iodide of mercury.

COMBINATION OF IODIDE AND OXIDE OF ANTIMONY.

It is well known that when iodide of antimony is put in contact with water, hydriodic acid and oxide of antimony are formed; it was even formerly used as a mode of obtaining hydriodic acid. This effect requires a moderately large quantity of water, and I have found that when a smaller quantity of water is employed, the decomposition is not perfect, but that a combination of oxide with unaltered iodide, corresponding to the powder of algaroth, is produced. The quantity of iodide remaining undecomposed varies according to the quantity of water; the precipitate is at first of a fine yellow colour, but after remaining

for some time in contact with water, it is further decomposed, and, finally, nothing but oxide of antimony and hydriodic acid remains.

I have made several analyses of this yellow precipitate, and as its composition, when the same proportion of water was employed, appeared to be nearly constant, it may be useful to state the mean result of the analysis, which corresponds to—

4 Atoms oxide of antimony $(12 + 64.6) \times 4 = 306.4$.
1 Atom iodide of antimony $(189.7 + 64.6) = 254.3$.

As the quantity of iodide decomposed increases with the quantity of water used, and with the time that the precipitate remains in contact with the water, it is evident that the composition of this precipitate must be liable to considerable variation.

NEW MODE OF PREPARING PROTO-IODIDE OF TIN.

In the course of some researches on the combinations of chlorine with iodine, in which I am at present engaged, I was led to the investigation of the general law of the action of iodine upon the chlorides, and met with some curious and unexpected results, which I shall communicate in a future collection of these miscellaneous observations. At present I shall only describe a simple mode of obtaining the proto-iodide of tin beautifully crystallized. If we take a warm solution of proto-chloride of tin, and add to it a quantity of iodine in fine powder, the iodine is rapidly dissolved; and if the solution had been strong, a large quantity of the orange-red iodide of tin is deposited immediately in small micaceous plates, which, when in the fluid, appear like red litharge. If the solution be less concentrated, little is deposited on the instant, but as the solution cools (and great heat is evolved during the process) the iodide separates in long splendid red prisms of four and six sides. These are very delicate, and require great caution to be preserved.

While in the solution from which they were deposited, these crystals preserve very well; but if after having been taken out they come in contact with water, they are decomposed, hydriodic acid and oxide of tin being formed.

In the process, a quantity of perchloride of tin is formed; the decomposition is thus very easily explained: taking two atoms of proto-chloride of tin and one of iodine, you have—

2 Chlorine + 2 tin.
1 Iodine.

And after decomposition—

2 Chlorine + 1 tin.
1 Iodine + 1 tin.

I shall develope the general law of the action of iodine upon chlorides in a future communication.

PRIORITY OF DISCOVERY OF THE IODIDE OF PLATINUM.

In the October number of the Journal de Chimie Medicale, there is an abstract of a letter sent by Lassaigne to the Academy of Sciences, announcing his discovery of the iodides of platinum, and of the various saline combinations into which one of them enters. He, in it, merely states generally the result of his labours, deferring the more particular exposition of the history of these bodies until the appearance of a matured memoir.

According to Lassaigne, there are two iodides of platinum, formed by decomposing the two chlorides of platinum by iodure of potassium; they are both black powders, insoluble in water, and they correspond in composition to the chlorides, containing, the one, 2 atoms of iodine + 1 platinum, and the other, 1 atom of iodine + 1 platinum. The periodide, says he, unites to the iodides of potassium, of sodium, &c., and forms double iodides. He also obtained a combination of hydriodic acid and iodide of platinum.

I would direct the attention of my readers to a paper, published in this Journal in July, 1832, on the iodide of platinum

and its saline combinations, in which I described that substance at length, developed the history of the compounds it forms with the iodides of the basic metals, and enumerated all the important facts in its history. It is a source of the highest gratification to me, that so eminent a chemist as Lassaigne has followed the same train of research, and fully established the accuracy of my investigations by their close coincidence with his results. There is but one point on which we differ, and on that he appears to have fallen into an error, for which, from the simplicity of the subject, I cannot well account. He considers the periodide of platinum as being composed of 2 atoms of iodine + 1 platinum, while, according to my analysis, it is composed of $1\frac{1}{2}$ iodine + 1 platinum.

Where a difference arose between a chemist, so justly celebrated as Lassaigne, and myself, I would be very much inclined to suspect that I was wrong, but in the present instance there is no doubt that Lassaigne has fallen into error. When perchloride of platinum and ioduret of potassium are mixed together, the perchloride being in excess, iodide of platinum is thrown down, and *chlorine liberated.* This fact at once proves that the iodide thrown down contains *less than two atoms* of iodine, and by decomposing it by heat, the analysis constantly gave as its composition, $1\frac{1}{2}$ atoms iodine + 1 platinum.

I had the honour of reading my paper to the Royal Irish Academy in June, 1832, and it was published in this Journal the July following. The letter from Lassaigne was read to the Academy of Sciences of Paris the 17th September, 1832, and published in the Journal de Chimie Medicale (the only journal in which I have as yet (Nov. 23rd) seen it) October, 1832. It is thus evident that he has been anticipated by me in these researches; but it is certain that he was not aware of having been so, for he makes no reference whatsoever in his letter to the labours of any other chemist, and I am aware that Lassaigne is too honourable to act otherwise than in the most candid manner.

In my paper I announced the existence of the proto-iodide

of platinum, but did not enter into its description in detail; I consider that it is the same with the proto-iodide described by Lassaigne. Another point to which it is necessary to refer, is, that Lassaigne examined the compounds of iodide of platinum with iodide of potassium, &c. as double iodides, whilst I investigated them as iodine salts, in which the iodide of platinum is the electro-negative (acid) element, and the other iodide, the positive (basic). He does not appear to have any general idea of the nature of the compounds of the negative iodides with hydriodic acid, but I succeeded in developing their nature, and the nature of the hydracids generally, in a paper published in the July number (1832) of this Journal; and acting on my theoretic ideas of their nature, succeeded in forming the compound of iodide of platinum as the acid, and ioduret of hydrogen as the base, which has since occupied the attention of Lassaigne.

ART. XXII.—*Notes on Malignant Cholera, as it appeared in Dublin.* By SIMON M'COY, late one of the Resident Medical Officers of the Grange Gorman-lane Cholera Hospital.

THE medical reader has already perused so many books and minor undertakings on and about cholera, that he now hardly does more than glance over the beginning of paragraphs in each new issue from the press on the subject, from a pre-conviction that nothing new is to be expected in the elucidation of its phenomena, and almost as little of *important* novelty in its treatment. Knowing this, I should have hesitated in obtruding any thing under the head of cholera on public notice but for the following considerations. In April last I was appointed, by the General Board of Health for the city of Dublin, one of the resident medical attendants of its chief cholera hos-

pital, Grange Gorman-lane, and continued, with a short interval, in constant attendance until the beginning of August following. The great extent of this establishment, (for it was capable of accommodating upwards of 700 patients, and had sometimes upwards of 500 within its walls,) and unfortunately the long continuance and malignity of the disease in this city, afforded facilities of observation not surpassed in any quarter of the globe, while the excellence of its internal regulations placed at our disposal every means that could be conceived necessary to effective treatment. There was but one thing to limit full investigation, namely, a positive prohibition to make any post mortem examinations during my stay in the hospital; not one was made of those who died there; I deplore this—it closed a door of knowledge against us, perhaps an important one; at any rate, if there were those there who were willing to run the risk said to attend such investigations, and if these could be prosecuted without any the least outrage on the public feeling or decorum, I cannot comprehend the utility of prevention. The introduction of a new disease into the country, its great fatality, the uncertainty where or when its ravages might cease, the length of time its appearance was apprehended, and the panic its presence created, were stimuli enough of themselves to excite the earnest attention of medical men to every thing that concerned it. The uncertainty of the future still continues in the public mind, and the uncertainty of the present has not been diminished by the number of never-failing cures proffered through the daily, weekly, monthly, and quarterly press, without much advantage apparently. The nature and novelty of the disease, the opportunity afforded me of regarding it for months, the little success attending the efforts every where made to impede its progress or limit its destructiveness, and the natural anxiety which pervades all classes of the community, have induced me to give a few observations from my note-book, satisfied that if, under circumstances, I give one *prac-*

tical fact, I shall not have occupied a space in this Journal in vain. I shall state merely what I have myself witnessed. Of whatever use theoretical disquisitions may be, to whatever purpose hypothesis may be made available, I feel my own incompetence to add any thing attractive to the abundance in this department already before the public.

Doubts have been raised that the cholera in this country is identical with the true Indian cholera; the point may not be of much importance, but I have conversed with many army surgeons who served in India, and saw much of the disease; all declared in the hospital that the cholera before them was that of India, scarcely modified by the difference of latitude of the countries or habits of the inhabitants. That the disease is new among us I would almost take upon myself to affirm; many years' attendance on the poor of this city at their own dwellings would, in all probability, have brought me in contact with it, if it did really exist. I have never until this year seen any thing like it. The question, whether the disease is communicable from one person to another, mediately or immediately, and whether other matter than the human body be capable of retaining for a period, and then disseminating it, is one of the greatest importance, in many points of view, and accordingly it has been frequently raised by medical men, and those not of the profession, and discussed by either with almost a rancorous pertinacity. I will not presume to act the syncratist in the conflict of opinion, but I know these facts as bearing on it. Of 200 or 300 servants attached to Grange Gorman Hospital, including nurses and ward-maids, a much less proportion of them have, I think, been attacked with cholera than of a similar description of persons out of doors. I have not known one of those persons employed to carry the sick from the gate to the wards, or those who carried the dead from the wards to the dead-house, or those engaged in burying the dead, or those who collected the clothes of the patients as they arrived, to deposit them in a place pro-

vided for their reception, or those of the establishment who conveyed the sick from their dwellings to the hospital, attacked with cholera, although some of them were for months so employed, endured great fatigue, and were far from denying themselves the indulgence of spirituous liquors when they could get it. In every bad case I always appointed a ward-maid to attend exclusively to it, to prevent any chance of mistake or neglect in the exhibition of the medicines ordered, or the regular performance of other offices no less essential. On coming unexpectedly into the wards in the middle of the night, I have often found these persons stretched on the same bed with a collapsed patient, sometimes asleep; yet I have not known any ill consequences to follow. The frictions performed by these females obliged them sometimes to inhale the pestiferous exhalations (if such there be) from the bodies of the patients, yet the instances of their being attacked with true cholera were very rare indeed. Those excellent ladies, the "Sisters of Charity," whose exertions in practical works of mercy were unceasing, who inhaled for hours the very breath of the dying, have not in a single instance, to my knowledge, sustained injury; the Protestant clergyman, who prayed in the wards, and the Catholic clergyman, the nature of whose duties obliged him to sit by the bed-side, with his face often in actual contact with that of the patient, sustained no injury. None of the medical officers took cholera. I have tasted the rice vomit and escaped. Several women were brought in, in very bad cholera, with children at their breast endeavouring to draw sustenance from this maternal source. Some of the mothers have died, but the children have not been attacked; others who recovered have refused to let the infants be taken from them during their illness, and no ill effects followed. Some females were delivered in the hospital at different periods of utero-gestation, and out of the number, two, I think, of the children survived; one of these, however, took the disease in three weeks after, and died in a few hours. The suddenness

with which the number of patients seeking admission increased or diminished was very remarkable; on four successive days, for instance, we had 285 admissions, and on the four next following we had 497; and in a fortnight afterwards, the numbers on four successive days were but 134. On one night, from midnight till 7 o'clock in the morning, we had but two admissions, and but one week previously, patients were coming in at the rate of 40 or 50 in the same period of time. How may this be accounted for? On the other hand, I have been informed that amongst the visitors allowed into the wards to see their friends, two took cholera in one week, and, I believe, died; a woman accompanying the cot which conveyed her son to the hospital, took ill at the gate, although previously apparently in good health, and was the most rapidly fatal case of cholera I witnessed. It was no unusual occurrence to have two, three, or four members of the same family in the hospital together in cholera. Certain streets in Dublin sent in fifty patients, I think, to one sent from other streets in all appearance equally calculated to produce disease. One of my pupils, who had occasion to come to me to the hospital almost daily, was obliged, after a time, to discontinue his visits, from observing that his bowels became unpleasantly affected every time he came there. Neither the history of the disease, which I have read with some care, nor the facts which came under my own observation, have served to convince my mind on the contagion question; perhaps the fault is in the mind. I should rather be inclined to consider cholera neither contagious nor infectious.

Writers have distinguished certain stages in the progression of the symptoms of this disease; if this is merely for the convenience of description, there may be little objection to it, but if it is intended to mark a regular succession of symptoms, by witnessing any of which, one would be enabled to say to what extent the malady had gone, and thereon to found a prognosis, or a mode of treatment, I can only say I have not found it very useful in practice.

I have observed the greatest irregularity in the *succession* of the symptoms, in their *duration* and *severity*. I have seen any one symptom take precedence; I have known any one of its symptoms occasionally absent; I have seen all the symptoms strike at once. I have seen the disease linger with trifling symptoms for a week before there was much cause for serious apprehension; I have seen it run its course from apparently perfect health to dissolution in one hour and three quarters; I have seen them present every shade of severity, from the most tranquil state to one of great agony. There was one circumstance remarkable on this subject, that the prevalence of particular symptoms appeared periodically endemial; for three or four successive days the great majority of patients received into hospital would have one symptom or train of symptoms predominating, the next period others, and so on; sometimes most of them on their arrival complained much of cramps, and of nothing else; at other times they were almost all vomiting; again, febrile symptoms of the asthenic type would present themselves, which in a longer or shorter time merged into regular cholera; at another time they came with flushed countenance, and tumid and very tender abdomen; at another time, cold, pale, and almost lifeless, &c. &c. I was not able to connect these with any remarkable atmospheric changes. I think most of the worst cases I have had were during the prevalence of drizzly minute rain: the air much charged with electricity appeared to me obnoxious to the disease. It was observed that after a day or two of rain the number of cases increased; but this might have depended on causes unconnected with the malady itself. Until the beginning of June I hardly saw an individual under fifteen or sixteen years of age affected, and had almost concluded that young persons were nearly exempt from such infliction; but in July the number of children under my own care was to adults as one to thirteen or fourteen. I saw one instance of pure cholera in an infant three weeks old.

As the patients were seldom brought into hospital until the dis-

ease was in full operation, I had of course few opportunities of noticing what have been called premonitary symptoms; but in taking my notes of cases, I have endeavoured to learn the state of health for some time previously to the attack, and have been assured by more than one-third of them that they had no indisposition of any kind preceding the sudden invasion of cholera; many informed me that they had had trifling bowel complaints for some days before admission, for which they had taken salts, or castor oil, or pills, which either relieved for a short time, or increased the affection, or produced no sensible effect; that they were not prevented following their usual avocations (sometimes very laborious ones), but that suddenly they were obliged to quit work and go home to bed, or come at once to the hospital. Others told me that they were habitually too free in their bowels, had seldom less than two evacuations, more commonly three, in the twenty-four hours, and were very liable to bowel complaints from slight colds, from irregularity or change of diet, &c. Of what I witnessed, the following may serve as an example:— One of the nurse's deputies, while sweeping her ward in apparently very good health and spirits, suddenly complained of pain in the abdomen and sickness of stomach; this was quickly followed by vomiting and cramps, and in half an hour she exhibited the symptoms of the worst form of cholera. One morning a cot arrived with a boy affected with slight symptoms of cholera; the patient's mother walked beside him to the hospital, and as the gate was about to be closed, she complained of sickness of stomach and weakness; it was for a moment supposed that she only feigned illness, that she might be admitted inside with her son; it quickly, however, became evident that she was really unwell; she was sent to a sick ward, and in fifteen minutes from her first complaining was perfectly blue, pulseless, and evidently sinking fast; she died in an hour and three quarters after being first seized; this female told me she had had no complaint up to the moment of her stomach becoming sick. Between 8 and 9 o'clock, P. M., on the 18th July, a

girl, aged twelve years, was received; she had had two stools during the day, attended with trifling pain, which occasioned her being sent to hospital; but she was so free from any symptoms of cholera when admitted, that she was sent to a convalescent ward; the entire of that evening she was in great spirits, laughing and singing as she sat in bed, and saying she should get her discharge in the morning: she slept well during the night. About 9 o'clock, A. M., on the 19th, she got a slight turning in her stomach, and uneasiness in her bowels, for which she was ordered a draught of castor oil and some warm tincture; at 12 at noon she was in perfect collapse. A deputy in one of my own wards complained to me at 3 o'clock, P. M. of a slight change in her bowels, as she called it; she obstinately refused to take any medicines but the house oil draught; at half past 5 o'clock she got a slight cramp in one leg, and in fifteen minutes afterwards her voice, her countenance, and her manner were so altered, that I could hardly believe it to be the same person. This woman was up the night before on duty, and as I was in the ward the whole of the night with some bad cases, I am positive she was not previously indisposed.

This summary of a few cases exemplifies the varieties I have witnessed of the disease in its commencement. I saw another of those females in collapse, and was told she was first seized with pain in her head and flushed countenance. I have not seen the very commencement of such a case, but I have known many taken into hospital with such symptoms, who sooner or later fell into true cholera. Except in a few private cases I have had of cholera, I can say little of predispositions to the disease. In two of these I had been often consulted for some distressing effects of the multiform dyspepsia. One had been three years ago under my care with a bad form of jaundice; another had had dysentery in August, 1830; these two remained in good health after recovery until attacked with cholera; they were females in comfortable circumstances, and, I believe, very temperate. Another female I saw in this city was

an inveterate drunkard. Another was a gentleman much addicted to the after-dinner indulgence of the table, and who had brought his constitution to such a cachectic state, that the most trifling scratch could with difficulty be prevented degenerating into a bad ulcer. From the number of those whom I had reason to believe were of temperate habits that I saw in hospital with cholera, and the number of a different description I have known to escape in the midst of the disease, I am inclined to think the fatality, *quoad* cholera, arising from the free use or abuse of intoxicating liquors, is somewhat over-rated. It unfortunately happens in this country that most of the lower orders are addicted to drinking, in what a temperate man would say, to great excess; it is therefore no wonder that most of those afflicted here should have been drunkards. Do we always distinguish rightly between the *post hoc* and the *propter hoc?* In countries where cholera made its greatest ravages, the fatality has been nearly in an inverse ratio to the sobriety of the inhabitants. Are the weak of body or mind particularly disposed to cholera? I have some doubts of it; it is true that the proportion of women taken into the hospital to men was about as five of the former to three of the latter; but take either class separately, and it will be found that the robust of either have been as frequently attacked as the weak and infirm, perhaps more so; nor, according to my experience, is the prognosis worse in the latter than the former, *cæteris paribus*. There does not appear to be any period of life totally exempt from cholera, but the extremes of youth and age are least subject to it. I have had few patients above sixty-five. From eighteen to forty-five is the general range of the ages of those I attended.

The most common procession of the symptoms, such as I have observed them, is this: Sudden pain in the abdomen, either diffused or confined to one spot; if the latter, it is usually about two fingers breadth below the ziphoid cartilage, not much increased by moderate pressure, or in the course of the transverse portion of the colon; sometimes nausea, and vomiting

of whatever the stomach might have contained at the moment, immediately follows, and the patient complains of inordinate thirst. In those first vomitings I have often seen quantities of undigested vegetable matter, such as gooseberry skins, bits of potatoe, cabbage, &c., and portions of unchanged animal food. Sooner or later follows an evacuation from the bowels of a dark colour, not unlike a linseed poultice, and of very offensive smell. The strength becomes prostrated; the fingers and back of the hands assume a dirty hue, the calls for drink are incessant, and each indulgence causes a discharge from the stomach of a wheyish fluid, in much greater quantity than that of the fluid drank; although there might have been much ineffectual retching previously, the moment half an ounce of whey is swallowed there will often be vomited a pint or more without much effort comparatively, yet with much force; and frequently the patient has such an uncontrollable desire to evacuate the stomach, that I have seen them use a straw pulled from their beds, or their finger, to tickle the fauces just after taking a small drink, and, immediately after it was thrown up, implore as eagerly for more, to be again ejected by the same means, when the attendant's eye was withdrawn from them for an instant. A sensation of burning heat is felt at the stomach, and many seem to seek for drink rather with a view of "cooling their inside" than to quench actual thirst; the only drink that gives satisfaction is cold water, but when denied that, they will take any thing offered, provided it be cold; they will often refuse tepid or warm fluids, while beseeching for something to quench their thirst; even whiskey drinkers are frequently disinclined to swallow spirituous liquors after the second or third dose, or to take other stimulants without repugnance. After each fit of vomiting he falls exhausted into a quiet state, or a kind of doze, with eyes upturned, so as to expose only the white part through the half closed lids; this last appearance often continues to an advanced state of convalescence, the last indication of the sufferings he had endured, and the dangers he had escaped.

The integuments of the face and extremities become very much reduced in temperature; those of the abdomen likewise feel cold, the heat of the chest is rarely so much so, but often, when the surface of the rest of the body is as cold as that of a corpse, the scalp retains its natural heat, or is even preternaturally warm; this I have repeatedly noticed. In this state there are almost uniformly complaints of an oppressive heat, he throws off the bed-clothes as often as they are replaced, pulls open the bosom of the flannel dress in which he has been enveloped before being put to bed, and manifests discomfort at the application of external heat in any way applied; flannel bags of hot salt are put to his death-cold feet, and constant watching is necessary to prevent his drawing them away from it; somtimes he suffers it, as he thinks it relieves his cramps. In every degree of coldness the sensibility of the skin is elevated. His features now become angular, his countenance haggard, and characteristic of bewilderment or alarm. The secretion of urine has been suppressed, perhaps from the first moment of attack, but if not, shortly after; and he often complains of such urgent desire to pass water, that although I could not detect any external manifestations of a distended bladder, I was twice induced to introduce a catheter, but found no urine. A pain is often felt in the region of this viscus, which is increased by rather firm pressure above the pubis. This pain is occasionally very severe. The alvine evacuations become more frequent, and like those of the stomach, are ejected forcibly; they have either passed at once into the sero-lymphous discharge, resembling water rice has been boiled in, with bits of curdy matter floating in it of various sizes, from that of a pin's head to that of a split pea; or there is first a stool or two resembling thin flummery. The alvine evacuations are, from the commencement to the close, passed without pain, and rarely with premonitory uneasiness in the belly.

At first the pulse was fluttering and irregular; it has now be-

came frequent, small, quick, and compressible. Sometimes in three or four hours the blueness of the hands becomes intense, particularly under the nails, and their skin has a shrivelled appearance, as if they had been for two or three days enveloped in a poultice, or like those of a laundress, except in colour, and covered with a cold clammy sweat; the insteps get blue, but I have not often seen the colour here present that continuous dye which it does on the hands; in general, the minute vessels can be distinctly traced here, while the hands seem as if they had been immersed in some colouring matter. I have known patients to express surprise at this appearance, "wondering what could have soiled them in that manner." The line separating the blue from the white skin is often distinct on some part of the leg, and I have often remarked the difference of temperature above and below this line to be as abrupt as that of the colour; the skin of the face often gets rather a leaden tint than a decided blue. It generally requires firm pressure on a blue part, continued for a few seconds, to make it white, but the colour is rather quickly restored; if a vein be selected on the instep, and the blood be pressed out of it for an inch, the blood rapidly fills it from either the cardiac or distal end, if a valve does not interfere; I have tried this experiment often with the same result. The respiration now becomes laboured, and the patient complains of a great weight or oppression about the *heart*, as he says, or on the chest generally; the thirst and vomiting continue unabated, while the purging often subsides after three or four rice-water evacuations, or there begins to be passed from the rectum a fluid resembling water meat had been steeped in, with an oily film here and there over its surface; sometimes it is more bloody, and sometimes (although rarely) almost pure blood. In some instances I have seen dejections, which in colour, fluidity, and transparency, perfectly resembled a solution of ammoniated copper, in the quantity of six or eight ounces at a time, and generally without any fæculent odour. I saw this

very often during the month of May, but less so in later periods. Synchronous with the increase of debility is the recession of the pulse, until it is at last lost entirely at the wrist and instep, although a feeble beat may often still be felt in the temple; I have been always able to feel a distinct pulse in the carotid arteries as long as the heart itself continued in action, and sometimes even after the latter became apparently still. At this time the number of pulsations in a minute are generally from 100 to 130.

Shortly after the commencement of the attack, the cramps in the great extensors of one or both feet become constant, and make him cry out with the agony they produce; the muscles of the fingers are less frequently affected; sometimes, however, they are very much so, the fingers being rigid, half-bent, and separated from each other during the paroxysm. Spasms of the other muscles of animal life are not common; I have sometimes seen those at either side of the spine affected. The tongue at the very commencement is generally natural in its appearance, but soon it gets covered on every part with a thin coating of white, as if it had been smeared with milk, resembling the appearance it often presents in the early stage of some abdominal inflammation; it is moist, and when protruded from the mouth, is large and flat; as the case proceeds it becomes remarkably cold, sometimes as that of a corpse; these characters it retains to the close, if the denouement is unfavourable; but if re-action sets in vigorously, the white becomes broken up into small patches on a florid red ground, with a more or less deep tinge of yellow or orange at its root; it often assumes a dirty greyish appearance; but I believe this last is more connected with the treatment I have adopted than as a part of the disease. The voice of the patient during the progress of these symptoms subsides into a whisper; his answers, although almost inaudible, are with effort; there is a pause between each word or two, as if to gain breath or strength for the utterance of the next; they are blown out rather than enunci-

ated. The renitency of life is now yielding fast; he ceases to call for drink, but if put to his mouth he swallows a little, with apparent satisfaction; the cramps also cease, as does the vomiting; there may come on a slight involuntary discharge from the bowels, running off without any force, sometimes extremely fœtid, at other times inodorous; I have occasionally seen this so profuse as to run through the bed and over the floor, and this even where the regular purging had ceased some time before; the respiration is thoracic and inaudible; the abdomen falls in at each inspiration, nor does it swell out again until the last moment of expiration, when a seeming effort is made to exhaust the lungs to their utmost; after an indefinite time he dies quietly, generally without any of those awful precursors witnessed in other diseases. I have not known convulsions to precede death, rarely the tracheal rattle; the eye retains its brilliancy; the blood often before death retreats from the surface, leaving the skin so pale, that from the appearance of the body, one could not immediately say whether death had been caused by cholera or hæmorrhage. For some time after the circulation and respiration have ceased, the toes are affected with spasmodic motion; I have observed them twitched at intervals of three or four minutes, six hours after apparent death. The time for the disease to run its fatal course is variable. I have seen it end in death in one hour and three quarters from its very commencement; I have known patients in the worst form to linger from seventy-two to seventy-eight hours.

There is another form in which cholera presents itself, and which I think I have oftener in females observed than in males. In the above more common form the patient lies quietly on his back, except when he turns, or is turned, on his side to vomit; he seldom speaks, except to call for drink, or to lay his legs to be rubbed when a paroxysm of cramp comes on; but here, although the symptoms begin like the preceding, in two or three hours after (sometimes sooner, sometimes later) there comes on considerable restlessness, which increases into violent jactita-

tion, that requires the united strength of three or four persons to keep in any controul; the patient tosses her limbs about, turns by sudden impulses from one side to the other, now on her back, with her arms hanging over each side of the bed, then on her side with knees drawn up and arms thrown out straight before her; the motions are sometimes so quick and violent that I have seen patients jerked out of bed upon the floor; she utters continually short sentences, not expressive of actual pain, but such as, "O! what way am I in?—O! I don't know what ails me," and then she calls for a drink, or to rub her legs, or to let her alone, follow each other in rapid succession; the chest heaves, and now and then comes a short but strong convulsive sigh, as if respiration was entirely the result of effort, and that it had become fatiguing; the cramps are usually very distressing, but in those cases the blueness of the skin is often very partial, being confined to the fingers and eyelids, and even in those parts the shade lighter than in other cases; sometimes, however, they are quite blue. The stools are, I think, oftener fœtid here, and passed without the patient calling for the pan; the vomiting is sometimes less frequent. In children the disease is somewhat modified; they seldom complain of cramps; the blueness of skin is mostly strongly marked round the eyes, and I have remarked their pupils much dilated; I think the purging is even less in proportion to the vomiting than in adults; they are cold and still, with shrunk features, but their hands are not shrivelled, nor is there generally the greasy or cold clammy sweat on the face in them; their thirst is as great as that of adults. I have not known the mental faculties of cholera patients disturbed in the disease, nor even the same degree of mental debility which often attends great bodily weakness under other circumstances; some lunatics I had under my care gave most correct answers to questions connected with their condition, but less so as they advanced to convalescence. When patients are in other hospitals, particularly females, they frequently express

uneasiness about their family, how their children are to be taken care of during their absence, &c.; but such recollections of home I have found very rare in cholera patients, the natural affections develope themselves with convalescence.

The symptoms of cholera, although usually such as I have described, present many striking varieties in detail occasionally; so much so, that there is hardly any one symptom I could say was essential to the disease; this, however, to a certain extent, may depend on its duration previously to admission into the hospital. Cases presented themselves in which the skin remained quite pale through its whole course, so that I should say there was a white cholera and a blue cholera, with scarcely any difference in malignity; sometimes there is no vomiting, often no purging, some have neither; sometimes the skin is quite dry and cold, or the heat of surface not remarkably reduced. In three fatal cases I have known the secretion of urine diminished, but not entirely suppressed until shortly before death; I had one blue case where the thirst was very moderate, and the patient was anxious to get something to eat, although on questioning her she said she did not feel hungry, she, however, ate a good part of a chicken. I had two cases where the menstrual discharge had preceded the symptoms of cholera, and continued uninterrupted through the worst part of it; in many this evacuation commenced immediately on convalescence being established. I saw two cases of mortification of the toes in the hospital; but I am ignorant of the previous history of the cases; they had no symptoms of cholera when I saw them.

In many of those who complained of the burning heat of the stomach, I found they had taken ardent spirits, or something medicinal, before admission; but others denied having gotten any thing. I have heard the upturning of the eyes attributed to the exhibition of opium, but I have seen this appearance in many cases where no opium had been given. I have seen the

ammoniated copper stools before the administration of any mercurial preparation, although in colour they resemble the stools passed by infants sometimes who have gotten in a short time a good deal of calomel. I have heard these stools attributed to mercury. The rice-water vomit sometimes possesses acid properties. On one occasion, while standing by the bed-side of a patient, she suddenly ejected a quantity of this from her stomach, a part of which fell on my clothes; I was too much occupied at the time to have it wiped off, and the next morning perceived it had acted on the colouring matter of the cloth as an acid would have done, and on trial I found the original colour restored by water of ammonia; I procured some of this vomit, and mixed with it a strong solution of carbonate of soda, into a second portion some carbonate of potash, and into a third water of carbonate of ammonia; but there was no trace of effervescence to indicate the presence of a free acid: I had no other means at hand to test it, and of course these were not satisfactory; and the same day a patient, who was throwing up this matter, and who had gotten nothing but water from the invasion of the disease, came into hospital. I dipped my finger into what came off his stomach, and tasted as much as adhered to the point, and found it decidedly acid, of about the strength of equal parts of table-vinegar and water; it might be of importance to investigate this further.

I cannot take upon me to say that fever is one of the ways in which cholera begins; but I have known instances where patients were received with a frequent and often full pulse, face full and reddish, slight diarrhœa, skin warm and moist, abdomen full, soft, and without pain or tenderness on pressure, headach, and pains (not cramps) in the limbs, who fell into collapse in eight or ten hours after admission. If the patient in cholera is to recover, the amendment is generally very quick in its progress; the return of the pulse, however feeble, is anxiously looked for; but I have known the pulse to return and disappear three times during the progress of a case; one of my pa-

tients, who recovered, had not the slightest trace of pulse at the wrist for fifty-eight hours after her admission. Heat returning to the surface is of course a good sign, but as I before remarked, the coldness of skin in some cases which terminated fatally was little below the standard of that of some persons in health, and if artificial heat has been employed, nothing can be learned by this criterion. The appearance of any thing coming from the stomach or bowels, other than the rice-water fluid, is favourable, but bile most so; in fact, I consider the patient no longer in malignant cholera when I see yellow bile coming from either; the vomiting sometimes changes to a dark-coloured matter, not unlike what persons labouring under cancer of the stomach sometimes throw up; this often precedes recovery, but not so if the patient has been much exhausted, or this appearance comes on late in the disease. A very troublesome and protracted hiccough sometimes follows hard upon the first symptoms of re-action; this has been always favourable as far as I have observed. The blueness of the fingers will often remain some time after decided re-action has taken place. The return of the secretion of urine is a favourable sign, but it is often tardy in returning; I have had patients who recovered, and who did not pass water for three days. I had a female patient sent in to me on the 13th of July who was cold, blue, pulseless, and clammy, and who passed considerable quantities of urine every day; there had been no suppression when transferred to a convalescent ward, and of course not then. Calmness or stupor, with great coldness and blueness of surface, is bad. I believe the jactitating cases are worse than most other forms, but many of them recover. The more rapidly collapse sets in, the more danger there is; I have seen exceptions to this, and, indeed, to all these observations, but not so numerous as to affect the general rule. I do not think the prognosis *so much* depends on the intensity of blueness of the skin as I have known some to imagine; I have seen extremely bad cases where the skin was but little discoloured. Great coldness of the tongue is un-

favourable. The cases which required the simplest treatment, and which were the most favourable in event, were children under two years old. I think I have witnessed as many, or even more, recoveries among persons whose frames were naturally delicate, than among robust muscular persons. The alteration in the character of the countenance is perhaps one of the best indications of recovery, accompanied with returning heat without external agency, and a pulse palpable at the wrist. I have not seen a single instance of a patient being affected with cholera twice in the hospital; many have been in twice, but in every such instance, where I had means of ascertaining the facts, I always found that one or other of the attacks had not been true cholera.

(*To be continued.*)

ART. XXIII.—*A new Mode of making an early Diagnosis of Aneurism of the Abdominal Aorta.* By DOMINICK J. CORRIGAN, M. D., one of the Physicians to Jervis-street Hospital, Lecturer on the Theory and Practice of Medicine, &c.

1st CASE. Mr. H——, ætat. 27; he had been of very intemperate habits, and had undergone several mercurial courses for the cure of repeated attacks of syphilis. On the 19th April, 1832, when I first saw him, he complained of violent pains, occurring at irregular intervals, shooting through the abdomen, especially the left hypochondriac and lumbar regions. These accessions of pain were frequently accompanied with spasms of the abdominal muscles. He also felt pain in his back while making any exertion. The bowels were very much constipated, and he described the sensation felt on every effort of swallowing, as though the morsel or fluid stopped just before reaching the stomach, and then passed round towards the left side in its route towards the stomach. No enlargement of the liver could

be discovered. These symptoms commenced about two years before the date of this report. Mr. H —— stated, that during great portions of the time, he had enjoyed good health and immunity from pain. Latterly the attacks of pain and spasm had become more frequent and violent. As in most similar melancholy cases on record, the treatment during the two years had been of the most varied kinds, directed to the spine, stomach, or liver, as symptoms seemed to indicate, or as opinions on the nature of the disease varied. Bleeding, leeching, blistering, baths, remedies for dyspepsia, narcotics, country air, exercise, rest, all in turn had been had recourse to, and all with equal want of success. At different periods, under some new mode of treatment, he frequently seemed to be completely recovered, but the interval of ease was always a deception, and the treatment which before had seemed to succeed, always failed on a repetition.

On making a very accurate examination of the abdomen, I felt on the left side, immediately below the most prominent part of the cartilages of the ribs, a very deeply-seated and obscurely pulsating tumour; by means of the stethoscope *bruit de souffle* was heard in it, and on deep percussion a dull sound elicited. In order to ascertain from what cause the peculiar sensation felt in swallowing proceeded, I directed Mr. H. to swallow some fluid while I applied the stethoscope over the cardiac opening of the stomach. After the effort of swallowing there was a momentary pause, and then the loud gush was heard of the fluid entering the stomach, as if it had been driven into the stomach with the force of a syringe. To relieve the urgent symptoms of pain, spasm, &c., blood was taken from the arm, an opiate draught given, and opiate fomentations ordered to the abdomen. On the next day Mr. H. experienced so much relief that he believed himself quite well, and in this amended state he continued until the 25th, when he was suddenly seized with symptoms resembling those of peritoneal inflammation. His belly became swollen and tense, and on the

left side, from the cartilages of the ribs to the crest of the ilium, very tender under pressure. He vomited incessantly, his bowels were constipated, urine was passed in very small quantity, and the countenance expressed great anxiety. In addition to these symptoms, the right leg, below the knee, had been cold and insensible, but still preserved, in a slight degree, the power of motion, while sensation, &c. was perfect from the patella upwards. In describing this attack, he said that the pain in the left side came on at first in fits, and on each fit he felt the right leg becoming more numbed and cold, and at length, at the time of my visit, about noon, it had, as described above, lost all heat and sensation. There was no venous congestion of the limb. The pulsation of the tumour was at this time violent, and contrasted strangely with the pulse, which was very feeble and weak. A blister was ordered to the side, and an opiate given. Some ease was obtained, but next morning there was an exacerbation of the symptoms, which continued until the middle of the day, when death ensued.

Post mortem, next day. Abdomen distended, no peritoneal inflammation. On turning aside the intestines the aneurism came into view, about the size of a small orange, in front of the aorta, and arising from it, just as this vessel cleared the opening in the diaphragm. The tumour lay close upon the cardiac opening of the stomach. The sac of the aneurism was half filled with coagula. It was composed merely of cellular tissue, and communicated with the aorta by a large circular opening with a well defined thick rounded margin formed of the middle coat of the artery. The vertebræ were not at all affected. The sac had burst by a small opening behind the peritoneum, and had poured out several pounds of blood, which, forcing its way behind the left kidney, formed a layer of coagulated blood, from one to two inches in thickness, behind the peritoneum, pushing forwards the posterior layer of this membrane, the kidney, and the intestines, and extending but as a layer of less thickness into the pelvis, where

it completely enveloped the muscular coat of the bladder, and then passed across the pelvis, but still behind the peritoneum through its whole course. No blood was effused into the cavity of the peritoneum, into the stomach or intestines. The liver was of the pale yellow hue so frequently seen in scrofulous subjects, rather under size, friable and soft. Gall bladder full of healthy bile.

The nature of the disease had not been discovered by any of my predecessors while attending the case, and I should probably have been equally unsuccessful, but that from some accidental circumstance, such as the intestines being more than usually empty, the pulsation of the tumour had come within reach. The early discovery of the existence of this disease is often a matter of the greatest importance, and it is also one of the greatest difficulty. The symptoms are so uncertain, that unless the pulsating tumour be plainly felt, or "*bruit de soufflet*" be heard, the nature of the disease can at best be only suspected. The pulsating tumour must, however, attain a considerable size before it can be felt with the hand, and if, as in the case related by Dr. Beatty in the 5th Vol. of the Dublin Hospital Reports, the aneurismal tumour be situate behind the aorta, between that vessel and the spine, the difficulty of discovering it is greatly increased. If an aneurism be in a constant state of distension, equally as the arterial trunk with which it is connected, then can there be no gush of a diverging current of blood into it; there can be no vibration of its parietes, and there will of course be no *bruit de soufflet*. This is frequently exemplified in aneurism of the aorta within the thorax, which, when thus circumstanced, and not coming in contact with the parietes, affords no direct sign whatever of its existence. An aneurism of the abdominal aorta is peculiarly calculated for preventing the production of *bruit de soufflet* in it, for when the patient either stands or reclines with the shoulders elevated, the column of blood in the descending aorta is of sufficient pressure to keep the aneurismal sac in a state of constant distension equal to that

of the vessel itself; and hence there can be no gushing current of blood into it on each contraction of the heart, and of course no "*bruit de soufflet.*"

It occurred to me that if I could relieve an aneurism of the abdominal aorta from this hydrostatic pressure that keeps it constantly distended, thus preventing that gushing current into it which produces "*bruit de soufflet,*" this sign might become perceptible, and we should then be able, by its presence, to diagnosticate aneurism of the abdominal aorta at a much earlier period than we have yet been able to achieve. I shall now relate a case in which I carried this idea into effect.

On the 11th of October, 1832, I saw Mr. M——, ætat. 38, of temperate and active habits. His principal complaint was of debility in all his limbs, but greatest in his arms, in which he experienced a sensation of intolerable fatigue, even from their own weight, after walking or making the least exertion. His voice was peculiarly low and weak, resembling the characteristic voice of cholera, but he presented no other symptom of a laryngeal affection. He complained of soreness in the epigastric region. This region, and both hypochondria, appeared prominent and smooth, destitute of any muscular lines, and presenting just such a projection as an enlarged liver might produce; but no defined edge or solid viscus could be traced. The epigastric region was tender on pressure, and on percussion it sounded dull, while all the lower portion of the abdomen sounded clear: no pain referred to either shoulder, and he could lie without difficulty on his back and on either side. The stomach was irritable, and appetite very bad; a small portion of underdone beef was the only food he could eat with relish; tongue slightly coated; bowels regular; cough occasionally a little troublesome after lying down, seldom accompanied with any expectoration; skin hot; pulse 100, wiry. The history given to me was, that having previously enjoyed good health, he was, about three months before, attacked by vomiting, which

returned for three or four mornings successively; that he then felt his appetite and strength failing, and began to perceive the soreness of the epigastrium, but its prominence never attracted his attention. A most careful examination of the chest did not reveal any sign of heart or lung disease. Quite unable at this visit to discover the nature of the affection, I prescribed for the most pressing symptoms, leeches to the tender epigastrium, and a mild purgative. The evacuations brought away by the purgative were perfectly healthy, and the tenderness of the epigastrium was very much diminished by the application of the leeches. He was then put on minute portions of blue pill and extract of gentian, and a milk diet. This improved his appetite, and agreed with him better than any previous plan of treatment. On the 23d there was scarcely any alteration of the symptoms, but that the weakness was greater. The bowels having been very free for a few days, and the abdomen in consequence less swollen than before, I made another careful examination of the epigastrium, and I thought that on making deep and steady pressure with my hand I could perceive more than the natural pulsation half way between the umbilicus and the ensiform cartilage, and a little to the left of the median line. On applying the stethoscope, I could, however, only hear the action of the right side of the heart transmitted downwards, and a strong pulsation, which might be only that of the aorta. The idea mentioned above now occurred to me, that if there were aneurism of the aorta, *bruit de soufflet* might not be produced in the erect posture, and yet that for the reason already mentioned it might become evident, if the sac were relieved of the hydrostatic pressure above it, by placing the patient in a perfectly horizontal position. I desired him to lie in that position, and then, after the lapse of a few minutes, applied the stethoscope, when I heard distinct and sharp "*bruit de soufflet*" (*bruit de scie* of Laennec) in the situation of the pulsation. It could also be heard in the left hypochondrium, but ceased to

be heard to the right of the median line, and did not extend downwards along the median line more than half way between the ensiform cartilage and the umbilicus, again diminishing in intensity as the stethoscope was moved upwards, until at the ensiform cartilage it was replaced by the natural sounds of the right side of the heart. On making him resume the erect position, the "*bruit de soufflet*" vanished. This experiment I have very frequently since repeated, and always with the same result. Sometimes a moment's lying in the horizontal position has been sufficient to make the "*bruit de soufflet*" evident, at other times it required a lapse of two or three minutes before the sound became very distinct. This is what would be expected. There is now (November 30) at the date of my writing these observations for publication, no longer any doubt of the nature of the disease. The pulse is intermittent, and the pulsation of the tumour is so plain that it cannot be passed over.

I can conceive (although I am not aware of such a case) that an external tumour pressing on the abdominal aorta, and diminishing its calibre, might, in an examination conducted as directed here, produce "*bruit de soufflet*" by its effect in narrowing the calibre of the aorta at a particular point; but in any large artery thus narrowed, the "*bruit de soufflet*" is heard beyond the narrowing to some distance along the track of the vessel, while in aneurism the sound is confined to the dilated part.* If an aneurism of the abdominal aorta have very firm and unyielding sides, as from thick deposition of fibrin within it, it is perhaps not likely that change of posture could do much towards the production of "*bruit de soufflet*," for such an aneurism would, from its thick walls, not yield to allow any blood to leave it; it would remain in a state of permanent distension in any change of position, and there being no vibration

* For an account of the laws regulating the production of *bruit de soufflet*, *vide* Lancet, 1829, Vol. ii. p. 1, and a paper on "Permanent Patency of the Mouth of the Aorta," &c.—*Edinburgh Medical and Surgical Journal*, No. iii. Vol. xxxvii.

of its parietes, there would not, of course, be any "*bruit de soufflet*;" but in most commencing cases of aneurism of the abdominal aorta, before the deposition of fibrine has taken place to much extent, the mode of examining for the disease, which succeeded in the present instance, may, perhaps, be a means in future cases of discovering the disease at an earlier period of its existence than we had heretofore been able to attain.

I shall now trespass on the reader's attention with a few short observations, naturally suggesting themselves from the above cases. The first of these cases presented those painful accompaniments of spasm which are among the most distressing effects of aneurism of the abdominal aorta. In the case already alluded to, related by Dr. Beatty, these attacks of spasm formed a most distressing feature.

The primary symptoms with which the second case set in, namely, vomiting, &c. are remarkable. On this point Mr. M. is quite positive, that the attack which he thought at the time was one of bilious colic, was the commencement of his illness. In a case related by Drs. Graves and Stokes in their Clinical Report of the Meath Hospital, published in the 5th Vol. of the Dublin Hospital Reports, the history of the case was traced to a similar commencement: "Robert Hamilton, ætat. 29, locksmith. He had enjoyed good health until the beginning of November, 1828, (about four months before the date of the report), when, after exposure to cold, he contracted severe pains in the loins, extending towards the umbilicus, and accompanied by a fit resembling colic. In a case which some years ago came under my observation, a lady was seized immediately after breakfast with violent vomiting and colicky pains. Circumstances connected with the case gave rise to a suspicion of poisoning; an examination took place, and the heart was found ruptured. A very small opening through the parietes of the left ventricle had permitted the blood gradually to distend the pericardium. In a case related by Dr. Townsend in the second number of this Journal, a woman recovering from an attack of

pneumonia was seized with violent convulsions, and expired in them. On dissection, the inner and middle coats of the ascending aorta were found ruptured transversely, to the extent of an inch and a half. Another similar case occurred under the observation of an intelligent medical friend. The patient, a stout man, was attacked with spasms of the stomach and trunk, and very soon after died. The case was, at the time, calculated to excite great alarm, as it occurred just at the time when cholera had made its first appearance in this country. A rupture of the aorta, with effusion of blood into the pericardium, was the cause of death. Bertin, in his work on diseases of the heart, gives a case of rupture of the heart in which severe vomiting occurred, but attributes the rupture to the vomiting; from the above cases, it is far more probable that the vomiting and spasm were themselves only symptoms of the impression made on the nervous system by the sudden lesion of an important vital organ, as the heart or aorta. With this view, in the second case related in this paper, and in the case extracted from Dr. Graves' and Stokes' report, the vomiting and colicky symptoms indicated the moment when the rupture of the aorta took place, which was the commencement of the formation of aneurism. Indeed, this view is raised almost to a certainty by three of the cases given above, when death quickly followed upon the rupture, and in every one of which vomiting or spasms occurred, which could only be referred to rupture of the heart or large artery. If this view be not taken, the symptoms resembling colic, &c., from which a patient labouring under aneurism dates the commencement of his illness, are exceedingly likely to mislead his attendant, and to divert attention away from the real nature of the disease; but with the view here given, these symptoms will be considered not as affording evidence of disease having its primary seat in the functions of the stomach or intestines, but as indicating the particular period to which the commencement of the aneurism may be referred.

ART. XXIV.—*Cases of Irritative Erythema*. By ROBERT LAW, M. D., Fellow and Censor of the King and Queen's College of Physicians in Ireland, Physician Extraordinary to Sir Patrick Dunn's Hospital.

MARGARET FALLON, ætat. 20, unmarried, three days since sent out in the rain barefooted; in the evening she was seized with a severe shivering and violent headach. Admitted into hospital the third day of her illness; her left knee and wrist were very much swollen and red; the left cheek, also, under the eye, exhibited a similar swelling, marked with a deep crimson blush. Pulse frequent, full, soft, and compressible; tongue covered with a thick slimy fur; respiration very much hurried; great prostration of strength, and depression of spirits. Leeches and stupes were applied to the swollen parts, and afforded some relief. I now ventured upon a small bleeding, more with a view to see what appearance the blood would exhibit, and as a guide to me in the treatment I should afterwards adopt, than that I was very sanguine that it would do much good.

V. S. ad ℥viii.

℞ Aquæ acetatis ammon. ℥ii.
Mistur. camphor. ℥iii.
Vini seminum colchici ʒi.
Syrupi aromatic. ℥vii.
Misce. Cochlear. duo ampla tertiis horis sumenda.

The view I took of the case was, that it was one of acute rheumatism, accompanied with greater prostration of strength than I had before witnessed in this disease. The small quantity of blood drawn (not exceeding four ounces) exhibited a dark grey appearance, and was loosely coagulated, such as we have observed when venesection has been employed in cases of typhus fever. I did not require this index of the depressed state of the system to make me change my plan of treatment. Bullæ, filled with a dark bloody fluid, presented themselves on

different parts of the body, especially in the situation of the parts which were originally swollen and red. The powers of life seemed to be completely prostrate. She had a low, muttering, incoherent, delirium.

℞ Sulphat quininæ, gr. xii.
Carbonatis ammoniæ, ℈i.
Confect. aromatic qs. fiant boli quatuor, sumat unum tertiis horis.
Strong beef tea, porter.

Some of the bullæ gave way, discharging a dark ichorous fluid, and leaving the skin in a shrivelled state; she gradually sunk into a deep coma; the breathing became stertorous, and she expired without the system seeming to make the slightest rally. The friends of the patient would not allow the body to be examined. Although the swellings and redness of the joints led me to believe this to be a case of acute rheumatism, modified by a debilitated constitution, I soon recognized in it the features of the irritative erythema which attends dissection wounds; there was a close analogy between the symptoms of each.

IRRITATIVE ERYTHEMA OCCURRING IN AN INDIVIDUAL LABOURING UNDER ACUTE PLEURISY.

George Hyland, ætat. 25, labourer, a strong muscular man, and who affirms that he has always been temperate in his habits, admitted into hospital August the 26th. On the 18th he got a severe wetting, and in two days afterwards was seized with a violent pain across his cheek; at the same time he had a complete loss of appetite, and excessive thirst; he was now obliged to confine himself to his bed. On the 23d instant was bled from the arm, with some relief. On admission into hospital he exhibited the following symptoms: Pulse 112, strong, round, and full; skin hot; respiration 40 in a minute, laboured; alæ nasi dilate considerably; decubitus on the right side, occasionally on the back. Percussion yields a clear resonant sound in

the right side of cheek, both anteriorly and posteriorly, as also in superior half of left side, both before and behind; the inferior half of this side, both anteriorly and posteriorly, emits a dull, dead sound. Respiration puerile in the right side; altogether absent in inferior left, both anteriorly and posteriorly; heard feebly, and, as it were, muffled,* in anterior superior half, while it is bronchial in posterior superior half. The heart pulsates in the epigastrium; the left side of the chest is palpably dilated. He feels no pain in the chest, but on attempting to make a full inspiration, has the sensation of a tight cord confining the lower part of his left side; he has neither cough nor expectoration. (Diagnosis; considerable effusion into cavity of the left pleura.)

V. S. ad ℥xii.

℞ Tartari emetici gr. iv.
Aquæ ℥v.
Tincturæ opii gutts xx.
Syrupi ℥i.
Misce. Sumat cochlear duo ampla tertiis horis.

27th. Blood neither buffed nor cupped; mixture vomited him three times. Pulse 104, more strong, full, and vibrating; respirations 24 in a minute, not so laboured; alæ nasi do not dilate so much as on his coming into hospital; stethoscopic phenomena same as before noticed; he lies on his back, with inclination to right side; countenance expresses much anxiety.

℞ Calomel gr. vi.
Tartari emetici gr. i.
Opii puri gr. ii.
Conserv. ros. q. s.
Fiant pilulæ quatuor sumat unum tertiis horis. Linimentum ammoniæ lateri affecto infriciendum.

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* I have adopted this term to express that dullness of respiration which is heard in the pulmonary tissue when it has not been sufficiently compressed to have its cellular structure rendered quite impenetrable to the air.

28th. Pulse still soft, full, and vibrating; skin hot and dry. A number of small tumours, resembling furunculi with vesicular apices, containing bloody serum, now made their appearance upon different parts of the body, especially upon the extremities. The right eye is quite closed from tumefaction with erisipelatous redness of the lids.

29th. Wandered much through the night, and is now in a heavy sleep, almost approaching to coma.* Pulse retains its round, soft, vibrating character; tongue covered with a dry brown crust; the tumefaction and erisipelatous redness now extended to the right lid, in consequence of which this eye also is completely closed; the redness has spread to the forehead. An erysipelatous blush, resembling gout, occupies the right great toe, and is also in circumscribed patches on the backs of both hands.

℞ Carbonat. ammon. ʒi.
Sulphat. quininæ ʒss.
Confect. aromatic q. s.
Fiant boli sex, sumat unum tertiis horis.
A pint of port wine; strong beef tea.

September 1st. Pulse softer, and more compressible; he raved much during the night; he now seems very restless and uneasy. The puffing and redness of the eyelids have increased so much that the eyes are completely hid; vesicles, containing a dark ichorous fluid, have formed upon the right upper lid. A deep erisipelatous blush extends from the dorsal surfaces of both fingers and toes up along the extremities. The small tumours, which first presented themselves like furunculi, have now assumed very much the appearance of the shrivelled pustule of small-pox. There is a swelling about midway up the left leg,

* There is a full, quick, and bounding pulse, which has no relation to inflammatory action, and a small and concentrated pulse of no extraordinary frequency which properly belongs to it.—*Travers on Constitutional Irritation.*

external to the spine of the tibia, with palpable fluctuation, but no discoloration of the skin.

2nd. Pulse 152, very feeble; he can scarcely with difficulty be roused; the discharges from the bowels pass involuntary; he has a difficulty in protruding his tongue, which is brown and shrivelled; respiration more hurried and laboured, occasional rhonchus moriendum. The tumefaction and redness have increased in extent and intensity; some of the small pustular elevations first observed have given way, and discharged a dark bloody fluid; their appearance, when emptied of their fluid contents, closely resembles the "burnt blister," the skin which enclosed the matter lying loose and shrivelled. He expired in the evening of this day.

The disease, which developed itself after he came into hospital, was of so serious a nature as to make us, if not altogether forget, at least to attach a secondary importance to the affection of the chest, for which he originally came under our care.

Examination of the Body seventeen Hours after Death.—Great emaciation, considering the short duration of the illness. The body emits a fœtor not unlike that which proceeds from one that has died of confluent putrescent small-pox. The whole surface, both trunk and extremities, studded more or less thickly with accuminated conical elevations, some resembling the pustules of small-pox, but without the areola of inflammation; others have more the appearance of the eruption of varicella or modified small-pox; others, again, resemble the bullæ of pemphigus gangrenosus.

On dividing the cartilages of the 5th and 6th left ribs, some greenish unhealthy pus oozed out, which, when the tumour was raised, proved to be the contents of two or three circumscribed abscesses which had formed in the cellular membranes, connecting the pleura pulmonalis and costalis in this situation. On opening the chest, with a view to see the position occupied by the fluid and lung in the cavity of the pleura, the base of the

lung was found to be lifted up from the diaphragm, and was on a level with the nipple of the breast. The fluid (which was a straw-coloured serum, with streaks of lymph floating in it) filled all the cavity of the side, except where the lung, pushed upwards and forwards, lay applied to the anterior wall of the thorax, from the clavicle to about the height of the nipple of the breast; the lung was retained in this position by the cellular membrane, which constituted the matrix of those abscesses, from which the matter proceeded on dividing the cartilages of the ribs. Long adhesive bands traversed the fluid from the pleura costalis to the pleura pulmonalis. The lung, much diminished in size, was of a dense, spongy, consistence, and had lost all trace of its cellular texture. The right side of the chest was quite sound. The liver was of a marbled nutmeg colour; the other viscera seemed healthy. The swelling on the joint of the left leg, when cut into, gave issue to about two ounces of greenish pus, tinged with blood; there was no thickening, or appearance of lymph, bounding the space occupied by this matter. The muscular structure, in the immediate vicinity of the matter, seemed as if it had been dissolved in it; it had quite lost its natural consistence.

What an unexpected complication presented itself in the case we have just detailed! How shall we designate it? Shall we call it gangrenous erisipelas; or pemphigus gangrenosus; or irritative erythema? Whatever term we may apply to it, in order to convey an idea of the cutaneous eruption, we must admit that the constitutional symptoms resembled the effects of of an animal poison introduced into the system.

Ellen Read, ætat. 32, married; confined about two months ago, since when she has never been in good health. About a week since was exposed to cold and rain, and the next day was seized with shivering and pains in her bones. Her wrists now became swollen and red, and being considered to be labouring under acute rheumatism, she was bled, purged, and got Dover's powder. After three days, she complained of headach and

deafness, and fell into a stupid comatose state, for which a blister was applied to the nape of her neck. She now came under my care, when I found large condylomatous swellings, of a bluish colour, in different parts of the body; there were also numerous pustules, containing a yellowish purulent matter, and large vesicles or bullæ, containing a bluish serous matter, in various parts. The back of each hand was swollen, and covered with a deep erisipelatous blush. The nose was very much swollen and red; this swelling and redness extended to each lower eyelid, and involved the cheeks under the eyes, so that the angle between the nose and cheeks was quite filled up; the skin covering the swelling was of a deep crimson hue, and was raised either into pustules containing a yellowish purulent fluid, or into bullæ filled either with a dark serous matter, or with a clear transparent fluid; some of them had given way and discharged their contents, leaving the skin shrivelled. Pulse 180 in a minute, small and compressible; respiration hurried and jerky (*saccadée*); frequent sighing; great restlessness and agitation; complains of the impossibility of becoming warm; bowels too free; excessive thirst; the body emits a heavy sickening fœtor. No appreciable change took place in the symptoms for two days; she then fell into a deep coma, with stertorous breathing, and occasional muttering delirium, and thus expired.

The examination of the body threw no light upon the nature of the disease. The blood was unusually fluid, and of a black gory appearance. The condylomatous tumours contained an unhealthy greenish pus.

The three cases which we have just detailed suggest to us many considerations of pathological interest. 1st. When and under what circumstances do we meet with a similar train of symptoms? what are the prominent features of the disease? does the eruption produce the constitutional symptoms? or is it merely an external evidence of some peculiar virus introduced into the system?

We have seen the disease so frequently associated with local injury as to look upon the like as essential to its production. But the injury in some cases has been so slight, that we have had a difficulty in reconciling the severity of the effects with the insignificance of the cause. We are therefore obliged to account for the phenomena by some peculiarity in the system, whether original or acquired. This peculiarity may be impressed upon the system by some mysterious intempories of the atmosphere, whose precise nature we are utterly at a loss to fathom. In what other way can we account for the fact, detailed by Dr. Butler in his work on the Plymouth Dock-yard disease, that fifteen men in working health should receive wounds so slight as not to oblige them to relinquish their employments; and that, in the course of a short time, these wounds should create fever and irritation, of which death was a common result. Although in no instance did the disease arise except after local injury, still the same injuries, and more severe, had been received over and over again without such serious results; and here we find the entire fifteen cases occurring within a few months, although at the same time there was nothing new in the nature of the men's employment, nor in anything instrumental to the local injury, from which we could suspect the introduction of any virus into the system; nor was there any constitutional irregularity in the individuals to furnish us with data to predicate that slight injuries would be attended with such fearful results, the strongest and most vigorous constitution, equally with the weakest, falling a prey to the disease following upon an apparently insignificant injury. We must, therefore, from our inability to account for such unusual results from common causes, refer them to some unknown condition of that universal agent—the atmosphere. How often have we observed erisipelas in the same way to present itself as an epidemic in the wards of an hospital, and to fasten itself upon every injury, so that the surgeon is deterred from operating for fear of this complication.

We next come to consider if there be any local injury which is, *per se*, competent to produce the disease we have described, independently of any favouring influence. Although we believe wounds received in dissecting are of this nature, still by no means to the extent generally supposed. How many such wounds are received without any disagreeable consequence; and even in most of these cases which have been attended with untoward sequels, have we not been able to detect some pre-existing constitutional derangements? Still there are some dissection wounds which seem endowed with the fatal prerogative of producing the disease, no matter in what state of vigour the system may have been at the time of the infliction of the injury. Wounds incurred in the dissection of subjects of puerperal fever seem to have a peculiar claim to this melancholy pre-eminence. Is there any purely constitutional disease, unconnected with local injury, which bears any resemblance to that which we have just described. Small-pox seems to us to bear a close resemblance to it in many particulars; in it we have the same nervous derangement exhibited in the general agitation, and restlessness, with delirium, terminating in coma. We have often, too, the variolus eruption assuming the character we have just observed as being present in the cases we have detailed, the pustules often containing a bloody serous fluid, and the intervening skin covered with a deep erythematous blush, or exhibiting either petechiæ, or more diffused ecchymoses. Such a case of small-pox lately fell under my care; the pustules contained a bloody fluid; the interposed skin was covered with petechiæ; into the cellular membrane surrounding the kidnies a large quantity of blood was infiltrated. Abernethy has well observed that fevers, produced by local disease, are the very identical fevers which physicians meet with when there is no external injury; and in his description of what he terms sympathetic or irritative fever, he describes what he had met with independent of local injury.

In the cases we have detailed, the constitutional disturbance seemed to have preceded the local affection, or cutaneous eruption; and this latter to have re-acted, as it were, upon the constitution, impressing a peculiar modification upon the symptoms. Thus does the fever precede the eruption in small-pox; and this eruption gives rise to the secondary fever, which is modified, in some degree, by its extent and circumstance. Thus do we observe the characteristic distinction between small-pox and the varioloid disease to consist in the existence of secondary fever in the former, and its complete absence in the latter, although we often find the eruptive fever of the latter incomparably more violent than that of the former. We must refer this distinction of secondary fever to the severer injury inflicted upon the skin and cellular membrane by the eruption. Nor is it the only case in which extensive injury of the skin awakens a similar train of alarming symptoms; burns and scalds, when they occupy much extent of surface, and even in some cases where they are less extensive, but occur in the neighbourhood of the cavities, give rise to the same constitutional tumult, which Mr. Travers, in his valuable work on Constitutional Irritation, ascribes to the important position occupied by the skin as the organ of exhalation, or as an expansion of the sentient extremities of the nerves, the destruction of which must propagate an immediate shock to their source and centre, the brain. We may adopt this explanation and say, that the morbific virus (for such it would seem to be) acting, like the variolous matter, upon the skin, the seat of tangible impressions, and converting natural into morbid sensations, the irritation from thence is communicated to the brain, the organ to which sensations, whether healthy or morbid, are first transmitted, and from which they are reflected upon the organs regulating the different functions, viz., circulation, respiration, temperature, and secretion; and these are the functions which exhibit the derangement in such cases.

The cases we have detailed strikingly illustrates the derangement of these several functions. The sensorium was disturbed in all. In one case (Read) the pulse was 180 in the minute; there was a proportionate hurry of the respiration; this same case exhibited feebleness of the power of generating animal heat, indicated by the constant complaint of inability to become warm.

Every symptom and circumstance connected with these cases bespoke a disproportion between the power and action of the system; or in the expressive language of Hunter, an increased disposition to act without the power to act with. This is, in fact, the definition of an irritable habit, or an irritable condition of the system. That this condition of the sytem is essentially connected with debility is proved by the fact that the best illustration of it is furnished by the effects of hemorrhage.

As in the disease we have just been considering, so in hemorrhage, one of the most striking features, or most constant remote effects, is a hurry of the heart's action. There is no circumstance, connected with this morbid condition, has led to more practical mischief than this, from its cause being mistaken or overlooked. Again and again have I seen a practitioner, by the extent to which he has pushed his depletory measures in the treatment of an acute disease, produce this hurry of the circulation, and then, mistaking this effect of his treatment for the index of continuing inflammation, persist in the same measures, and add fuel to the flame; thus proving the evil consequence of depending upon a single symptom to guide our treatment.

We shall now very briefly advert to the treatment which we conceive suited to this modification of disease. The high but irregular excitement with the debilitated energies of the system tells us no less emphatically what we should avoid, than what we should do. Any, even the slightest, evacuation should be resorted to with extreme caution; and this should not go beyond the bare emptying the intestines, for to do more would

be to increase the debility and consequent irritation of the system.

As to bleeding in these cases, we should scarcely have alluded to it, feeling at a loss to conceive what end could be proposed in resorting to it. It seems to us a shade more reasonable than to bleed a person with a view to recover him from the shock caused by a fall, or to bleed upon the first return of animation after syncope. Still it has been practised, and extensively practised; but every one, whose opinion has been formed upon the results of his experience as to its effects, agrees in reprobating it. Abernethy remarks, we are not warranted to bleed in cases of irritative inflammation and fever, because these maladies are indicative of weakness, and likely to induce greatly augmented debility.

We now come to the positive treatment. As debility and irritability (as its consequence) constitute the essence of the disease, we can be at no loss as to the classes of medicines among which we are to look for our remedial agents. Tonics and antispasmodics at once suggest themselves to us, the former with the view to sustain the flagging energies of the system, and thus indirectly to quiet the tumult; the latter to bring down or reduce the irregular action to the level of the diminished power. Quinine, ammonia, camphor, are the medicines upon which we especially rely to fulfil the indications we have in view. Nor shall we be deterred by the wandering or delirium from the exhibition of wine and opium. The judicious application of these two remedial agents involve points of the nicest practice which can engage the attention of a physician, and constitutes, as it were, a touchstone of his ability or incompetency to distinguish between two morbid states, which, though they often exhibit themselves under features scarcely to be distinguished, are still no less diametrically opposed in their essential nature than in the treatment they demand. In the cases we have detailed, we saw that there were two distinct stages of nervous disturbance; one, to use the language of Mr. Travers, an active

sensitive stage; the other, that in which the active excitement has given way to coma, interrupted only by a low muttering delirium. A quick rapid pulse, the constant accompaniment of the first stage, exposes it to the liability of being confounded with inflammation, and to the consequent error in treatment. It is not long since I met an old practitioner in consultation; the case upon which we met was that of a lady who had been thrown from a jaunting car. When we met, four days had elapsed since the fall; she complained of internal soreness, the effect of the shock, but had no distinct pain; she was in a high degree of excitement; pulse 130, hard and wiry; skin hot and dry; she stated that she had had no sleep since the accident occurred. I had the advantage of my medical friend, inasmuch I had had previous opportunities of observing how the constitutional irritability of the individual modified any affection under which she laboured. Our views, therefore, differed no less as to the cause of the high excitement than as to the treatment. He, looking upon it as the announcement of some serious inflammation, suggested a bleeding usque ad ℥xx.; to this, of course, I could not, consistently with the view I took of the case, consent, but suggested a draught of forty drops of laudanum in camphor julap. Her husband, who was an apothecary, and capable of understanding the difference of our views, adopted mine, and administered the draught I proposed. After two hours she fell into a quiet, tranquil sleep, broke out into perspiration, and the next morning I found a very altered person indeed; she had quite lost the anxious expression she had had the day before; her skin was soft; pulse 84, relaxed; no thirst. I shall make no further observations upon this case, than to ask, if the effects produced by the treatment adopted were such as we might have expected from an opposite plan.

In the second stage, or that in which the excitement gives way to coma, interrupted by low muttering delirium. It is now that we require the stimulating effect of opium. It too

often happens that when this stage has arrived, the season for interference with any prospect of advantage has passed by. Small doses of opium; carbonate of ammonia; blisters to the head, sinapisms to the feet, present a faint hope of benefit.

ART. XXV.—*Note on the Chemical Action of the Magneto-Electric Current.* By ROBERT J. KANE, M.R.I.A., Professor of Chemistry to Apothecaries' Hall. Extracted from a Letter to the Secretary of the Royal Irish Academy.

"SIR,

"AFTER many unsuccessful trials, I have succeeded in effecting the decomposition of water by means of the current of electricity induced in a conductor by the action of a magnet. The form of apparatus used for generating the current was the disk revolving rapidly between the poles of a magnet. Intending to follow up incessantly the developement of this important principle, I shall not remark further at present, but hope to be very soon able to communicate to the Academy the details of the experiment, as well as the other results to which it promises to lead.

"I remain, dear Sir, yours, &c.

"ROBERT J. KANE.

"*To the Rev. R. M'Donnell, D. D.*
"*Secretary to the Royal Irish Academy.*"

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Ph. Caroli Hartmann, M. D., Theoria Morbi, seu Pathologia Generalis. *The Theory of Disease, or, General Pathology.* By Dr. P. C. Hartmann. Vienna, 1828, pp. 471, 8vo.

Ludov. Herm. Friedlaenderi, M. D., Fundamenta Doctrinæ Pathologicæ. *Elements of Pathology.* By L. H. Friedlander. Leipsic, 1828, pp. 434, 8vo.

The authors of these works are professors of medicine at Gottingen, Vienna, and Halle, respectively. As they are all on the same subject, we conceive it will be more interesting to consider them together for the purpose of comparison. We shall first, however, take this opportunity of making some remarks on the German school of medicine in general, particularly with respect to its literature.

We have long remarked with regret how very deficient English medical literature is in introductory treatises on the various branches of the science. It cannot be denied that we are far behind our continental brethren in this respect. Indeed, we might almost say that they are in the opposite extreme, so great is the swarm of books on every individual branch. For instance, in that at present before us, the only work of the kind we possess is Gregory's *Conspectus Medicinæ Theoreticæ*, an admirable work, certainly, for the time at which it was written, and one that may still be read with much advantage, as it gives an excellent digest of all that was then known or believed, and is written with truly classical taste. It contains a compendium of the elements of physiology, pathology, and therapeutics; and therefore cannot be fairly compared with a distinct treatise on any one of these subjects, as they are necessarily treated in a more brief and cursory manner in the one than in the other. It is now upwards of half a century since it appeared, and yet no one has since been found in these kingdoms to write a more

modern work of the same kind.* How different the case is on the continent, the three enumerated at the head of this article are of themselves sufficient to shew. The value of the German introductory works is much increased by the very copious literature, or list of books, on the various subjects treated of, which they almost invariably contain. As to the many valuable works in that language on the different branches of medicine and surgery, they are, we trust, too well known to render it necessary for us to mention them here.

General pathology is usually divided into nosology, ætiology, and symptomatology. The first of these is not what we usually understand by the term, but merely treats of the nature and general differences of diseases; whence it is by some more properly called general nosology, in opposition to special, or the description and nomenclature of the several species of disease. Again, ætiology and symptomatology have been by some authors, such as Ploucquet, Brandis, Harless, &c., not treated of as forming distinct branches of general pathology, but either combined with the nosology, or placed under other heads; the former, for instance, under those of dietetics, toxicology, materia medica, &c., the latter under that of special pathology. While on the subject of nomenclature, we may as well add, that what Hufeland calls *Pathogony* (*Pathogenie*) is that particular branch of pathology which treats of the general laws of the origin of disease; and that *Semiotics* (*Semiotik*) must not be confounded with symptomatology, the latter treating of the phenomena or symptoms observed in disease, and the former considering the phenomena, whether of health or disease, as signs, and referring them to their causes, or the correspondent alterations in the system. We must also observe that some terms and phrases occurring in German works in general are likely to appear obscure or unintelligible to those unacquainted with the doctrines and languages of the various schools of the several branches of philosophy. The writings of some of the modern natural phi-

* It may perhaps be asked, are not Pring's Pathology, and Parry's Elements of Pathology and Therapeutics, instances to the contrary of our assertion. We readily reply, they are not. Neither of them can be called introductory works, as they pre-suppose an acquaintance with the technical language and general doctrines of the science. In like manner, Martinet's Manual of Pathology, a work which, though written originally in French, has gone through two editions in an English dress, and may therefore be considered as belonging to its literature, does not in the least contribute to supply the deficiency. With respect to Andral's celebrated work, which has also become naturalized, it is of inestimable value to the advanced student, particularly the first volume, which contains a system of general pathology; but it also pre-supposes an acquaintance with the language and doctrines already received.

losophers in particular are so remarkable for singularity of opinions and phraseology, that an English, or indeed any rational German reader, would be likely to throw them down in despair or disgust. We are the more anxious to draw attention to this, as we have reason to believe that some of our countrymen have been greatly prejudiced against the German school of medicine, in consequence of meeting with such works on their first attempting to make themselves acquainted with its literature; and we beg to assure them, as well as our readers in general, that there are many authors of that school who for simplicity and clearness of style, and accuracy of method, might well serve as a model to some of our own. It must also be considered, that as the genius of the language admits of long and involved periods in the Ciceronian manner, a style that appears very simple to a native, may, to a beginner in the language, appear the reverse. But it is now time to turn to the consideration of the works that gave occasion to these remarks.

As they are all written nearly on the same plan, the best manner to give an idea of their contents will be to give an analysis of one of them. Conradi's is the one we shall select for this purpose, both as being the most inaccessible to our readers in general, and as being perhaps the most useful. As to Friendländer, though some of his doctrines would sound very strange to Irish ears, his treatise is very valuable, particularly to lecturers; if it were on no other account, at least on this, that it contains such copious references to works in various languages on every subject treated of. Hartmann is far behind the others in this respect, and, indeed, in others also.

Dr. Conradi* commences with an introduction, in which he defines pathology, divides it into general and special, and then subdivides the former in the manner we have already explained, (into nosology, ætiology, and symptomatology.) He then makes some remarks on its use, the preparatory knowledge requisite to its proper attainment, and on some of the best writers, ancient and modern, on the subject. The work itself is divided into three parts, corresponding to the triple division above mentioned. The first part treats of the nature, and general causes, and phenomena of disease; and the division of diseases according to their situation, simplicity or complication, course,

*Dr. C. is a great admirer of Gaubius, who, by the way, could boast of having among his pupils James Gregory, the author of the *Conspectus* already mentioned. His Institutes of Pathology are well known even in this country, though latterly, we suspect, more by name than by actual acquaintance. And yet they are still well deserving of attention.

quality, and origin; in short, it gives a digest of the general terminology of the science. The second section* of this part contains an enumeration of the most simple and general classes of the morbid alterations of the human system. These are, according to him, the morbid alterations of the vital power, those of the physical and mechanical properties of the frame, those of its chemical properties, and those of the fluids.

The second part contains the doctrine of the causes of disease; namely, the predisposing causes, natural and preternatural; and the occasional causes, or noxious influences, as Dr. C. terms them, consisting of the six non-naturals, so called, abuse of medicines, poisons, contagion, worms (not intestinal,) and insects, clothing, baths, and other external applications, burns, scalds, blows, and the introduction into the system of solid foreign bodies through natural or unnatural orifices. Action or rest of mind, also, must not be omitted. Indeed, it might almost come in among the non-naturals under the head of *motus et quies*. This whole part is very interesting and useful, and contains some singular facts that are not generally known.

The third part treats of the symptoms of disease, distributing them under the heads of symptoms derived from the functions of formative life (comprehending those of circulation and respiration, those connected with the *primæ viæ*, and those of the excretions of urine and perspiration); the symptoms derived from the functions of sensorial life; those from the sexual functions; and, lastly, those derived from the state of the body externally, with respect to size, colour, temperature, posture, face, eyes, lips, and mouth, tongue, abdomen, and extremities.

We had intended to give some extracts from this and the other works, but found, on trial, that they would take up too much room. Our readers must have perceived, from the analysis of one of them we have just given, that their merit consists in presenting to the beginner in a clear and methodical form an explanation of the various terms employed in treating of diseases, and of the past and present theories on the subject. Consequently, though very useful to him, or perhaps even to the advanced practitioner, as a whole, the few passages our limits

* In the original, both in the table of contents and in the body of the work, the second section of the first part is, we suppose by an oversight of the author or printer, termed the second part, and the proper second part, the third; so that there are two third parts, as the last is also so called. It is evident that the author intended to have only three parts in all, to correspond with the triple division of the subject.

would permit us to introduce here could not serve any useful purpose. Besides, we have already stated that it is the references that makes their chief utility to the latter class of readers. To those who do not know German, and to whom, consequently, Conradi is a sealed book, we recommend Friedländer, which is to be had in London. We cannot conclude our remarks without regretting that there is no work in English of the kind, at least (for Gregory's Conspectus has been translated) no work of the kind suitable to the present state of the science. As to hoping that any beginner would read one in Latin, we fear it would be vain.

Recherches D'Anatomie Transcendante et Pathologique. Theorie des Formations et des Deformations Organiques, appliquée a l'Anatomie de Ritta Christina et de la Duplicité Monstreuse, par M. SERRES. Membre de l'Institut de France, &c. Paris, 1832.

Researches on Transcendental and Pathological Anatomy. Theory of Organic Formations and Deformities, applied to the Anatomy of Ritta Christina, and of double Monstrosity, by M. SERRES. Paris, 1832.

THE labours of Geoffroy St. Hilaire, Meckel, Tiedemann, and the author of this work, in that part of physiology relating to the intra-uterine life, have led to discoveries of such beauty and importance, as to fix the attention of all who pursue the higher branches of medicine. We now can trace the different developments of the fœtal being, almost from the mysterious moment of incipient existence, to that where it is fitted for separate and independent life. We can watch the successive formation of its organs, enumerate them at its different periods, trace their mutual dependencies, and observe their physiological analogies. Further, we can, by observing the results of a defective or excessive development, announce the laws of monstrosities, and shew that even here, in this apparent confusion, there is a beautiful regularity.

Although so much has been done, yet the field of investigation is extending on all sides. How impossible to limit the bounds of a science. Who shall say what lies beyond that sea, on which indeed we can stretch a venturous sail, but never circumnavigate. Already the study of embryology promises to lead

to new and singular discoveries, and the laws of formation are seen to be analogous, in some respects, with those of disease.

When we consider the infinite variety in which diseased action is presented to us, and the singular inconstancy of its results on the functions of life and the organic tissue; when we reflect on the fact, that for ages no clue has been discovered to guide us through the labyrinth of pathology; we would be tempted to give up the study in despair, and think that nature had deviated from her general course, and admitted of creations under the blind influence of chance—yet he who has given himself up to the study of nature, through her works, revolts from such an idea, for every step which he takes himself, or has learned from the labours of his predecessors, tells him that much of what was formerly thought the result of chance influences, is now brought under the operation of constant laws; that no matter whether he directs his eye to the planetary system, or the microscopic wonders of the phytozoa, he will discover that all is under the government of unchangeable laws, fixed as their founder, and telling of that omniscience which governs

> Heaven and the abyss,
> And the immensity of worlds and life.

He will then be taught by analogy, when contemplating the present state of medical knowledge, to believe, not that the manifestation and results of disease are matters of chance work, but rather that the law or laws which govern them are not yet discovered. It is from the attempt to apply some of the laws of organogeny to the elucidation of disease, that the work of M. Serres derives much of its interest and novelty.

As the term transcendant or transcendental anatomy may appear obscure to some of our readers, we may premise, that it has been adopted by the celebrated Blainville in his work on the organization of animals.* According to this author, the different branches of anatomical study may be arranged as follows:

1st. *The Picturesque Anatomy.* This is the most superficial, and really the least important. Its observations are confined almost to the surface, and are directed to the temperaments and their expressions, (facies,) the passions and their signs, to the general form and proportions of the external parts, as for instance the organs of sense, and the active and passive instruments of locomotion.

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* De l'Organization des Animaux, ou Principes d'Anatomie comparée, Paris, 1822.

2. *The Surgical Anatomy*, occupied essentially with the mutual relations of parts, their form, their situation with respect to the whole system, and the changes produced by their derangements. This of course must be the most minute and laboured portion of anatomy.

3. *The Medical and Pathological Anatomy.* This differs from the last in being less minute as to the figure, situation, and relations of parts, but is directed more to their use, their anatomical and chemical composition, the predominance of this or that element, tissue, or system, and to the nervous communication of organs. This, the general anatomy of the immortal Bichat, is the basis of pathology, and pathological anatomy, so commonly confounded with pathology, is but its extension.

4. *The Physiological Anatomy.* This, while it considers the form, situation and anatomical composition of organs, yet examines them in their combinations into apparatuses concurring to a particular end or function, and by availing itself of all the necessary aids of Chemistry, and the mechanical and physical relations of organs, seeks to explain physiological phenomena. It is evident, however, that when confined to the study of a single animal, its explanations, though apparently satisfactory, are really incomplete.

5. *The Zoological Anatomy*, or the anatomy of animals. This, as it embraces the whole of the animal series, is far more extended and difficult than the foregoing species. Its end is chiefly to ascertain the presence of organs, and to consider their different forms in the groups of animals. These it arranges by their organization, and is hence the basis of zoology.

6. *The Philosophical Anatomy.* We shall give the description of this species in M. Blainville's own words.

"Finally, the sixth and last, and by far the most extended and difficult, is the *philosophical anatomy*, which we must carefully distinguish from the preceding species. We may perhaps define it better by the designation of *transcendental anatomy*. The most profound of all, without occupying itself with minute details on the form, situation, or even the definite or local use of organs, it generalizes every thing, it rises from facts to abstractions, that is, from *posteriori* to *priori*, and descends from the latter to the former. The greater or less degree of development of an organ is to it of little importance, but rather its existence, its connexions. It endeavours to describe the increasing or decreasing composition of animals; it follows an organ through all its possible variations, and recognizes it by some general characters, such as those of connexion and use.

"Its principal end is physiology or the explanation of the phe-

nomena of life, by the application of the general laws of nature."—*Blainville, Op. cit. pp. 4 and 5.*

The work of M. Serres is divided into three parts: in the first, he treats of the laws of formation of animal organization, of monstrosities by defect and by inequality of development, (*symmetric* and *asymmetric ectrogeny**), by arrest of development, (*analogic ectrogeny*), and of the seat of organic deformities proceeding from arrest of development.

In the second part he treats of monstrosities by excess; the laws of double monsters; the result of the complex and simple heterogenous organs of monsters by excess; of the seat of supernumerary organs; of the association of monsters by excess; of the characters, denomination, and division of double monsters; the explanation of their exterior and interior organization; the evolution of organs, and their relations with normal and anormal beings; the consideration of the limits of monstrosity by excess; the application of the laws of organogeny to pathological anatomy; the general etiology of organic deformities and monstrosities.

The third part is devoted to the elucidation and application of these laws, in the anatomy of the celebrated double monster, Ritta Christina. We fear that the limits of a review will not permit us to sufficiently analyse this most profound and interesting work; we must content ourselves with examining some of the points contained in the first and second parts of the volume; a constant reference to the atlas which accompanies the work being necessary for the proper understanding of the third part, we shall not attempt its analysis.

M. Serres commences by an announcement of his discovery of the laws of successive formation of organs; all are developed, not, as was formerly supposed, from the centre to the circumference, but from the circumference to the centre. All are at first double and symmetrical, though when their development is perfect they appear single, yet this is the result of the approach and fusion of the two original portions from without inwards, a fusion, which in the simple organs placed on the median line, seems so perfect, that were it not for the researches of organogeny, the fact of the separation of their symmetrical portions could never have been guessed at. By considering, however, the separation (even in their perfect state) of organs into two symmetrical, or nearly symmetrical parts; such for instance as the brain, spinal cord, lungs, heart, and generally the separa-

* From Ἐκτρώω, Ἐκτρωμι, and Γένεσις.

tion of the body by the median line, we can observe easily the operation of these laws.

The duplicity of organs, and the fusion of double organs so as to form but a single one, constitute the foundations of two laws, to which M. Serres has given the names of the laws of *symmetry* and of *conjugation* or *affinity*.

Now it is found that these laws apply to the development of the embryos of all vertebrated animals, no matter whether they have arrived at or even exceeded their physiological type, and when these deviations occur, they are seldom general, but limited to one or two organic systems, and only affecting the parts which concur to the formation of these systems, while the remainder undergo their proper metamorphoses, unaffected by the local deviation.

But it is obvious that the circulating system must be an exception to the above rule, as its deviations must be felt in all the systems to which it is distributed, for it is through it that the materials are brought for the formation of organs. Hence it follows, that the number and volume of organs are directly as the number and size of the arteries which are destined to them; a relation of organs to vessels, which it is declared is general and invariable, both in the natural condition, in the anatomy of monsters, and in disease.

After showing how the modern researches of organogeny have destroyed the absurd conceptions of monsters entertained by the ancients, such for instance as the transformation of the coccyx into the skull, and of the jaws into limbs, and also how the long disputed doctrine of organic pre-existence must fall before this study, M. Serres says, "We now no longer believe that all animal organizations are developed spontaneously, and at a single jet. Neither can we admit that organs are formed like a soap bubble, the appearance of which has been so long used to give an idea of developments. We now no longer believe that organs only increase by intersusception; this physiology is two centuries behind us.

"The more we study the embryos of animals and man, the more shall we find that the formation of organs is gradual and successive, and every step which we take in this elevated part of anatomy teaches us, that the younger the embryo, the greater is the subdivision (*fractionnement*) of organs; that the primitive mechanism of their increase consists in the juxta position of parts at first isolated, or in the addition of new layers to layers already existing; finally, that in their combination the materials of organs dispose themselves, as if a particular affinity presided over their arrangement, each organic tis-

sue, and each part of an organ being directed towards the part and tissue with which it is homogeneous, and only uniting with it.

"Thus nerves form themselves with nerves, arteries unite with arteries, veins with veins, the osseous nuclei attach themselves to bone, the fragments of the kidney on the little central kidney; but never do we see the kidney unite itself to the liver, the ovary, or the uterus, nor the combination of a nerve with an artery."—Pages 6 and 7."

These discoveries, as Serres remarks, completely overturn the doctrine of organic pre-existences, which held, that an organ in the very first moment of its existence, was in all its relations and forms the same as in the perfect animal, and differing only in size. It is now shown, on the contrary, that before arriving at its ultimate form, an organ must undergo transformations, numerous in proportion to the complication of the organ, so that there is a passage from a simpler to a more complex form, the latter always being preceded by the former. Hence the study of the forms and relations of the organs of the embryo will not give us a knowledge of those of the adult.

In illustration of these laws, let us contemplate the development of the human brain. It is shewn by Tiedemann, that if we examine the fœtus of man, after the first month of existence, we find that the brain and spinal marrow do not yet exist, their place being occupied by a limpid fluid. Harvey, Malpighi, Wolf, and Haller, have shewn that this is also true with respect to birds; and De Graaf, Haller, and others, have established it in the case of mammiferous animals. A limpid fluid, then, occupying the place of the brain and spinal marrow, seems to be the first rudiment.

In the second month transverse and longitudinal depressions are seen, so as to give the appearance of small vesicles. These, in the child, are found to be the rudiments of the hemispheres, optic chambers, and cerebellum. After the seventh week, Tiedemann found the dura mater, the pia mater, and the commencement of the pulpy structure of the brain; the first traces of the spinal canal, the cerebellum, the crura cerebri, thalami, and hemispheres; but no trace of the pons varolii, commissures, or corpus callosum, was visible. In the third month these parts are more developed. The hemispheres then represent membranous vesicles. The aqueduct of Sylvius is a perfect ventricle. The ventricles of the brain contain an enormous choroid plexus, and the olfactory, optic, and other cerebral nerves are now found, the two first of which can be traced to their origin. The fourth month shews us the sinuses of the dura mater, the corpora pyramidalia, and restiformia. The pons

varolii and the pituitary gland, the valve of Vieussens, the corpus callosum, and the fornix, with several other portions of less consequence.

In the fifth month the globular structure of the cerebral substance can be perceived with the microscope, and the chords of the spinal marrow are becoming fibrous, the cerebellum is divided into central and lateral parts, and the anterior commissure is found.

The sixth month displays the arachnoid decidedly, and the commencement of the convolutions on the internal surfaces of the hemispheres, while their external surface remains smooth. In the seventh, the cerebellum is covered by the posterior lobes of the brain, and the two orders of fibres of the crura cerebri are distinctly seen. At the eighth month we find the internal configuration and structure perfect, requiring now only an augmentation of volume. That of the surface remains still to be developed perfectly. The convolutions are found best marked on its anterior and middle lobes, while in the ninth month these become well and numerous, and the brain becomes fitted for the close of its intra-uterine life, and for the commencement of new functions.

It is obvious that in this rapid sketch of the development of the brain, we have omitted to describe the formation of many parts of interest to the anatomist; but as our object was merely to illustrate the transformations of an organ, and its passage by successive development from a simpler to a more complex state, a more minute detail, though adding to the strength of the illustration, would have been unnecessary. From these considerations it becomes plain, that the arrest of development in any organ or organs at any period of intra-uterine life, will cause a monster, who shall present a natural condition of some organs, and an unnatural state of others, but we shall find the analogies of this latter state, in the fœtal condition of the organ or organs, at the time when the arrest of development took place.

"Thus," says M. Serres, "does man owe to the complication of his organs that rank which he occupies in the scale of beings; he is placed at the summit, because his organization is the most perfect, taking this perfection in a relative sense.

"Now a general view of the organization of animals shews that their organic apparatuses, compared to those of man, are more and more subdivided as we approach the inferior classes. The difference of animals from man is then owing to the sim-

plicity of their organs, as compared with those of the human species, considered at the term of its development."

"But in taking this period as the point of departure, and gradually ascending through the different periods of the life of the human embryo, into the primary formation of organs; we see them more and more subdivided, just as in animals. The fixed and permanent organization of the beings which occupy the different orders of the animal scale, are thus reproduced in a transitory manner by the embryogeny of man."

From these data M. Serres concludes, that if the fœtal organs of the superior vertebrated animals are arrested in their development, there will result a fixed organization, which in the natural state should only be transitory; and that the organs thus imperfectly developed, will reproduce or re-present the forms of those of the inferior classes, and of the more superior, in proportion, as the arrest has taken place at an earlier period. He concludes further, that the laws of formation of the superior embryos, are applicable in every respect to the organization of the superior classes, and to their monstrosities; and that hence nature, in developing beings of the different classes, or giving birth to monsters, does not require the operation of special laws; for in the case of a monster to suppose that his normal organs were developed under the influence of regular laws, while his anormal organs were produced by irregular laws, would be to imply a contradiction never seen in nature. We shall here quote our author's words.

"In this instance, as in a thousand others, the spirit of hypothesis had turned us from the path of true observation; but returning to this, we find that nature repeats herself in all her acts, reproduces herself in all her operations. She varies her results in a thousand ways, subject always, however, to certain laws. A normal or an anormal, a regular or an irregular organ, is with her the same organ; she elaborates one as the other; both proceed towards their completion under the same laws; and whether they do not attain to their proper termination, arrive at or exceed it, they remain always circumscribed by that circle of laws which preside over organic formations."

We have now analysed the first chapter of this work. In the second, in which the subject of monsters by defect is considered, the author shows how, by the operation of this law, organization proceeds from without inwards, and that the body and its organs are formed by the approach and union of the symmetrical halves, that these will be separated by an interval greater in proportion to the youth of the embryo. Any arrest then of this process of union at the median line, will cause

an anormal opening, or a fissure greater or smaller according to the period when the arrest took place.

Thus, if the sides of the vertebral column be arrested in their progress towards fusion at the median line, we have various herniæ of the spinal cord, of the œsophagus into the vertebral canal, of the rectum through the sacrum.* The same principle explains an enormous number of monstrosities, spina bifida, hernia of the pharynx into the cranium, the varieties of anencephalous monsters, herniæ of the thoracic and abdominal organs through the anterior median line, the different forms of hare lip, congenital hypospadias, unnatural communications between the cavities of the heart, &c. &c. For a full account of these defects we would beg to refer to the classical translation of Andral's great work on Pathological Anatomy, by Drs. Townsend and West.

But when we look at monsters we see that there are species in which there is a harmony in their deformities, in which the arrest of development has at once, and to an equal degree, affected both of the primitive sides of the embryo; and secondly, we find monsters who present only one half of an organ atrophied, while the other presents its ordinary development. The first of these cases is the *symmetric*, the second the *asymmetric extrogeny* of M. Serres. Many examples of the last of these species could be given. Thus, in cases where there has been but a single umbilical artery, the organs of the pelvis are found developed only on one side; atrophy of the ribs and sternum, or of the face and head on one side; such are examples of this *asymetric extrogeny*, in reality a greater deformity than the former species, as in that, there is at least symmetry in the deformity.

In our author's great work on the Comparative Anatomy of the Brain, he has endeavoured to show, how, in its successive developments the brain of man passes through the forms of that of fish, reptiles, birds, and the mammiferous animals; a still more interesting observation is made here, as his researches on the formation of the bones of the head and face, show that in their progressive advance to the most perfect or Caucasian form, they assume successively the characters of the Ethiopic, Malay, American, and Mongalian head; and it is plain that, from an arrest of development, the fugitive characters may become fixed, and a child with a Caucasian figure may present an Ethiopian head. That such takes place there can be no doubt, and we would recommend the study of this subject, as an origi-

* See Bulletins de la Société Médicale d'Emulation de Paris, 1822.

nal pursuit for the phrenologists; who should inquire how far these resemblances of the heads of European children to those of other races, are accompanied by resemblance in character. These would be inquiries worthy of the science, and would advance it much more than metaphysical discussions, and arguments.

We hope to conclude the analysis of this profound work in our next number.

Practical Observations on Midwifery, with a Selection of Cases. Part II. By JOHN RAMSBOTHAM, M.D. London, Highley, 1832, 8vo., pp. 507.

"—— Vitiis nemo sine nascitur et optimus ille est,
Qui minimis urgetur."

Is a truth which has never been controverted or doubted from the day it was written by the poet through the succeeding generations of men to the present hour, when we quote it as a maxim whose spirit applies not more forcibly to the moral constitution of mankind, than it does to the literary offspring of their intellectual labours—books; and we therefore trust that the distinguished author of the volume before us will not suppose that we do not sufficiently appreciate the value of his work because we have adopted a motto which implies that it is not entirely faultless.

The first part of these Practical Observations appeared in the year 1821, and has received, as it highly merited, the almost unqualified approbation of the profession not only in this country, but on the continent and in America; we therefore sat down to the perusal of the present part, fully anticipating a rich treat of practical information; and while we are happy to acknowledge that to a great extent our expectations were realized; justice at the same time compels us to say that the work is far from being free from serious blemishes. In the first place, we are sorry to perceive that eleven years have in no degree improved our author's style, which is in general singularly infelicitous; a coarseness and clumsiness of expression offends the ear in almost every line, and occasionally the sentences are so arranged as to make their meaning very doubtful; in addition to which there is a strange perversion or misapplication of particular words, which, to ordinary ears, would be perfectly unintelligible; thus, the word "*under*" is compelled

to sustain relations not to be met with in any other writer within our knowledge; for instance, Case 186, p. 341, is entitled "Turning under a second Twin;" and in p. 353 another is called "Ascites under Pregnancy." Such sentences as the following are to be found throughout:—

"To expedite the extrication of the above-mentioned parts, a forefinger must be gently insinuated over one of the arms *within ready reach*, which, *under* the inclination of the trunk in the opposite direction, is to be carefully brought down."—P. 9.

But while we thus find fault with the style, we must give to the plan of the work, and, in general, also to the execution of that plan, the fullest measure of our approbation; to each section, after the discussion of its subject matter, is appended a series of cases illustrative of the application of the practical rules laid down, the errors to be avoided, or the dangers to be encountered; and must declare that we never read cases bearing more decidedly the stamp of fidelity and truth, nor containing a more practically instructive collection of facts for the benefit of the student or practitioner, while the part borne by the writer in several most important and critical cases, evincing, as it almost always does, great skill and matured judgment, is detailed in modest and unassuming language.

A passage in the preface, p. iii., and two others in pp. 58 and 78, in which the author very justly attributes to Dr. Douglas, of this city, the merit of having corrected Denman's explanation of the *Spontaneous Evolution of the Fœtus*, and of having recommended an improved practice in certain cases of unusual difficulty in labour, appears to us in no slight degree creditable to our author's fairness and liberality; not that we think it a merit in any man to tell what he knows to be the truth, but it is creditable in a writer to fling aside the wretched narrow-minded policy which prompts to conceal the merits of another, and that perhaps merely because that other is of this city or that; this remark is elicited from us by the recollection of an unworthy attempt made by Dr. Blundell, of London, in his public lectures, as reported in the Lancet,* to attribute to Dr. Gooch the exclusive merit of the discovery above alluded to, without even mentioning the name of Dr. Douglas. But this is not the only instance in which we are indebted to our brethren of the great city for acting towards us as if they believed that "no good thing could come out of Nazareth."

The first section of this work treats of preternatural labours;

* See No. 227, p. 517.

and in page 11, we find the following observation on the delivery of certain breech cases:—

"But it may also happen that the trunk has been suffered to pass with the belly to the pubes, and that after the extrication of the arms, the occiput is placed in the hollow of the sacrum, and the forehead to the pubes. This situation is not so favorable, &c."

Now, without meaning to doubt the *possibility* of such a malposition occurring by the natural efforts of labour, we certainly believe it to be a very rare occurrence, and would like to know if our author ever met with it in practice; we mean, where it had not been *made by interference.* If so, he has recorded no such case, but in the instances where delivery was difficult in breech cases, he expressly mentions that the head was in the usual position. And we find Professor Naegelè, who has certainly studied the exact mechanism of parturition more closely, and described it better than any living author, declaring that after a midwifery practice of twenty years, and with an hospital under his command, he had "never observed the occiput, in cases where the feet or nates presented, to turn into the hollow of the sacrum, whether the anterior surface of the child had been originally directed forwards or backwards, or during the further advancement of labour, had taken this direction."*

But supposing such a malposition to exist, we are utterly at a loss to comprehend the manœuvre recommended, p. 12, for releasing the head and finishing the delivery under such circumstances:

"With such intention," we are told, "the occiput must be brought well down into the hollow of the sacrum, *and the chin at the same time inclined upon the chest.*"

Now, how is it possible to make the head roll backwards so as to bring down the occiput, and at the same time incline the chin downwards? and equally difficult does it appear to cause the chin which is *in the cavity* of the pelvis, to incline upon the chest, which is already delivered and outside of the pelvis.

Of the remainder of the observations on breech cases, from page 13 to page 28, we must speak in terms of the highest praise and commendation.

Nor do we feel inclined to lower our tone of approbation in speaking of many parts of the next section, *On Shoulder Presentation,* although we mean to point out two or three matters

* An Essay on the Mechanism of Parturition, by C. F. Naegelè, Professor of Midwifery at Heidelberg, pp. 81, 82.

which strike us as calling loudly for alteration and correction in the remarks on that most important subject. In page 46 our author mentions, amongst other marks by which the shoulder may be detected, "the spinous processes of the vertebræ." Now to this, as a distinctive mark, we must object, because there are no spinous processes on the vertebræ of the child in utero;* and if, he merely mean what he calls in another place the "prominences of the vertebræ," we must remind him, that these are developed at the lower end of the column as well as at the upper, and that he mentions them, p. 8, as a distinguishing mark of breech presentations. A far more serious fault is to be found in the omission of all mention of any preparatory treatment to be adopted in cases where, from powerful contraction of the uterus round the body of the child, it is found impossible to introduce the hand in order to turn: in such cases our author appears to regard one resource of art only as available, namely, decapitation or evisceration of the fœtus. Now, this certainly does "overcome us as a summer cloud," and not "without our special wonder," accustomed as we have been in such cases, before resorting to such desperate measures, to try the effects of other means, such as emollient and anodyne injections, to abstract blood freely in proper cases, and to assist, if necessary, the relaxation desired by the administration of opiates. Now, the two former measures are not even mentioned by Dr. R., and the latter only to be condemned "as not at all lessening or counteracting existing difficulties, but rather increasing them; p. 63: but really he appears to us to entertain a very singular notion of the effects of opiates so administered, and of the time they take to produce those effects, when he adduces, as an objection to their use, "the lapse of time which ought to be allowed for awaiting the full effects of an opiate, during which the uterus is *hourly*† becoming more tenaciously contracted.—P. 62.

We must here tell the Doctor frankly that we think his notions unsound, and at variance with multiplied experience on the subject; the two measures which he has omitted to recommend we have repeatedly found of the utmost advantage, and by their means, with the aid of the third, which he damns alto-

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* "Chez les Enfans nouveau-nés l'apophyse epineuse n'existe point encore." Cloquet, Anat. Descript. p. 20.

† But if the opiate should produce the effect for which it was given, it will be in about twenty minutes after its exhibition, "when we are to consider the calm or disposition to sleep as affording us the most favourable opportunity for turning the child."—*Denman.*

gether, we have been enabled, without either decapitation or evisceration, to overcome difficulties in delivery which, previous to the adoption of such remedial means, were found to be insuperable; and, moreover, in so saying, we but echo the opinions of such authorities as Denman,* Burns,† Merriman,‡ and Hamilton.§

The cases appended to this section are full of interest and instruction, and we would in particular recommend case 114 to the attentive perusal of our junior brethren, together with our author's remark thereon, that they may be fully impressed with the danger, as well as "the impolicy of continuing to be for any length of time after the rupture of the membranes, passive spectators of the progress of a labour, p. 95, 6: in the case alluded to such neglect appears to have been *the cause of the patient's death.*

We confess our knowledge of physics is too imperfect to enable us to understand what the author means by saying, p. 50, that in his attempts to raise the shoulder of the child when obstructing the aperture of the pelvis, he has "now and then successfully used the protruded arm as *a lever;*" and our embarrassment is not diminished by finding him asserting in p. 59, that for a similar purpose he used the same part as a *fulcrum.*‖

The next section treats of uterine-hæmorrhage, and in *limine,* our author lays down that hæmorrhage is of two descriptions, *active* and *passive,* p. 107.

"The first ensues upon the rupture of a blood-vessel from increased exertion of the heart and arteries."

"The second follows the division, the erosion or the separation of a blood-vessel by violence;" to say the least of this, it is a very imperfect attempt at a division, and it would be very easy to mention instances of hæmorrhage, which could not be reconcileable with either species, as here laid down; but after all, this is not a matter of much practical importance.

In page 115 we find it stated as a fact, from which there can be no variation, "that during the whole term of utero-gestation, as well as *under* the process of a labour, a discharge of blood from the vagina can only arise from the detachment of a portion

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* Introduction to Midwifery, 5th edition, pp. 485, 6.

† Principles of Midwifery, 7th edition, p. 367.

‡ Synopsis of Difficult Parturition, 4th edition, pp. 88, 9, and 251.

§ Select Cases in Midwifery, 1795, p. 102.

‖ In a note in p. 457, the Doctor speaks of "the body of a woman in a public dissecting room, which had been *promiscuously* brought there;" this reminds us of an equally happy misapplication of words made by a constable to a noisy fellow in the streets at night, when he ordered him to *disperse,* or that he would *comprehend* him.

of the placenta, from its adhesion to the uterine surface;" now although this is *very generally* true, still exceptions must be admitted; for instance we very often meet with cases in which during the last three months, when the cervix is undergoing its process of development, a woman will have a small quantity of blood discharged per vaginam, as sometimes happens also at the period of quickening, and apparently attributable in both cases to the giving way of some small vessel about the cervix; the same thing very constantly happens in the commencement of labour, and apparently from the same cause, while the os uteri is undergoing dilatation; and again, a discharge of blood sometimes occurs at this time, "by the effusion of some blood before extravasated in the substance of the uterus,"* a circumstance of the occurrence of which, we can speak from personal experience. Nor should it be forgotten that we occasionally meet with pregnant women, who have sanguineous discharges returning periodically for the first three or four months of pregnancy, and resembling menstruation: in which cases the source of the discharge is very doubtful, and is supposed by Van Swieten Hoffman and Frank to be in the vessels distributed about the upper part of the vagina and the os uteri. Allowance must therefore be made for such contingencies, nor must every discharge of blood be supposed proof positive of the separation of the placenta, although in the majority of instances we shall only be exercising a sound discretion in acting as if it were.

To the following practical rule we must also decidedly object. "If at the extremity of the finger or fingers, a flaccid membranous bag, with the presenting part within it, be distinctly perceptible, *the case is at once determined to be one of accidental hæmorrhage*," p. 127. Surely our author must have met with cases in which the membranous bag could be very distinctly felt, and yet the edge of the placenta being at, or very close to the os uteri,† rendered them cases of *unavoidable hæmorrhage*, and liable to all the danger of that formidable condition; one of the most terrific cases we ever witnessed was of that kind. And in fact we find Dr. R. afterwards, p. 170 and 184, 5, describing exactly such a condition, but assuming what is not always the case, namely, that "the separated portion of the placenta is distinctly perceptible by the finger with the membranes passing off from it:" now this would imply a facility in detecting this state which unfortunately is not afforded us in

* Denman, Op. cit. p. 271.

† This relation of parts is well shown in Mr. Jewel's obstetric plate, No. 1.

practice, for we may with great care indeed, by a common examination in such a case, feel the membranous bag protruding through the os uteri, but yet not discover the dangerous proximity of the placenta, until the increasing danger of the case compels us to a more minute examination, perhaps even to the introduction of the hand.

From a comparison of page 123, with page 141, we feel at a loss to determine what is precisely our author's opinion as to the value of certain internal medicines in uterine hæmorrhage, since in the former passage he throws upon them almost utter discredit, and in the latter recommends, or at least sanctions their adoption as likely to be of service.

In concluding our notice of these sections on hæmorrhage, we wish to say, that with very few exceptions, some of which we have pointed out, they embody as sound a collection of judicious practical rules, as we think will be found any where; especially that on *unavoidable* hæmorrhage, from which we select in addition the two following passages, as more particularly deserving of notice.

"But it will frequently happen, that, when an individual has been long in waiting about the person of a woman in this situation, his powers of observation become blunted, and his mind is not sufficiently alive to the advance of the symptoms. They are creeping on gradually and insidiously, and escape his notice. The woman's powers are declining, yet he does not appear aware of the fact. He may, perhaps, acknowledge the necessity of delivery, yet he has not the presence of mind, or resolution to perform the act. Let such a one then appeal to the assistance of some intelligent practitioner of experience and judgment, who will not hesitate to give a decided opinion, and to act accordingly."—p. 179.

Few we believe will read this, without acknowledging the truth of the observation, and the excellence of the advice therein given.

The other passage will be found in p. 188, and contains the proposal of a new mode of practice; or perhaps we should rather say, a novel modification in the mode of applying a long established practice.

"I have therefore thought, that if in these desperate cases, by any gentle means, the liquor amnii could be discharged without inducing a greater degree of placental separation, some advantage would be derived from uterine contraction, and the violence of the discharge would be thereby checked. I must, however, in candour declare, that I have not had an opportunity of realizing the practical effect of this suggestion since it occurred to my mind: I offer it therefore merely as an object of future consideration. The method I propose is, to penetrate the centre of the placenta by a perforator or

other sharply-pointed instrument, and allow the liquor amnii to run off. If the discharge be thereby checked, delivery may be put off for a short time; but if the discharge should continue afterwards, delivery must not be delayed. Let it be clearly understood, however, that this act will not supersede the necessity of delivery sooner or later, and that it will cause some loss of the child's blood from the placental vessels."

How far such a mode of practice might be available or useful, we have at present no means of knowing from experience; but as a general rule, we have a great repugnance to the introduction of cutting or sharp instruments within the vagina, and still greater, when they must be passed beyond our reach; and if a blunt instrument were used, we think such a degree of pushing force would be required to make it pierce the membranous covering of the internal surface of the placenta, as would almost certainly separate a still greater portion of that mass from its attachments to the uterus. An instrument which we have been in the habit of using for a similar purpose under other circumstances, might perhaps answer very well the author's intentions: it consists merely of a long silver canula provided with a piece of strong steel wire; the end of the canula, being first introduced and brought into contact with the part which we intend to pierce, the wire pushed forward cannot go in any direction but the one intended.

Appended to the sections on hæmorrhage are 39 cases; 17 of *accidental*, and 22 of unavoidable hæmorrhage: of these the mortality appears to us unusually great; and particularly of the former kind, when viewed in comparison with those of the latter. Of the seventeen *accidental*, eight died, and of the 22 *unavoidable*, eight also died, so that the mortality of the former compared with that of the latter was nearly as 3 to 2.

It is remarkable also that among the *unavoidable* cases, there occurred no less than six instances of *the expulsion of the placenta before the child*, and that *all* of these recovered: from which facts our author draws this inference, p. 235:

"*That less danger attends an entire but natural detachment of the placenta in these cases, than is consequent upon a partial separation of that mass*, and, *that the expulsion of the child may afterwards be safely intrusted to the natural powers without further interference.*" The safety of the woman is probably ensured, partly by the constriction of the diameter of the uterine vessels, as a consequence of that strong contraction which suddenly opens the os

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* For a full exposition of our author's views on this point, see pp. 191, 2.

uteri, and loosens the placenta: and partly by the mechanical pressure of the head against their orifices, after its escape. Whereas, under a partial separation of the placenta every returning pain produces an increase of the detached portion, with its alarming consequences."

We confess we are not prepared to assent to the second of the practical inferences above drawn, but our experience of such cases, which however only amounts to two instances of the kind, warrants us so far in coinciding in our author's opinion of their greater safety, both of those which came within our knowledge having recovered without artificial assistance.

Our author concludes his remarks on this subject in these words;

"Yet I fear, that little advantage, farther than that which the above inference establishes, can be derived from the preceding cases. It would be the extreme of hardihood in any practitioner, to attempt the artificial separation of this foetal appendage, in imitation of its natural expulsion. Without the assistance of strong uterine action, that act would, in all probability, induce such a sudden and violent increase of the haemorrhage, as would shortly terminate the woman's life, even in spite of the immediate introduction of the hand to turn the child."—pp. 235, 6.

In reference to the above, while we entirely agree in our author's condemnation of such an attempt, we wish to refer to a case recorded by Perfect,* in which an ignorant midwife tore away the placenta from the os uteri, and yet both mother and child recovered under circumstances so extraordinary as to be almost incredible.

The author next discusses the subject of *Convulsions* as they occur in the pregnant and puerperal woman; and of the sections devoted to these we mean to speak in terms of almost unqualified eulogy; indeed, there is but one matter of practical importance which strikes us as objectionable in the remarks on the treatment of this terrific affection. After advising, very pointedly, that when venesection is performed in such cases the blood should be obtained "freely and in a full current from the orifice," and if this cannot be accomplished, and that the blood "merely trickle down the arm," he thinks "it would, perhaps, have fared better with the patient that the operation should have been *entirely withheld* than thus fruitlessly attempted," "since the chance of relief is *entirely* dependent upon the *sudden* abstraction of blood."—p. 256.

Now, we must at once tell the author that his practical in-

* See Cases in Midwifery, vol. ii. p. 228.

ference here appears to us totally unsupported by either reasoning on the matter, or the results of experience and practice; surely he cannot mean to contend that a woman labouring under convulsions will not be benefited by the abstraction of twenty, thirty, or forty ounces of blood from her system, merely because we cannot get it to flow in a full arched stream, but are obliged to submit to its coming slowly and "trickling over the arm," but that she would be better off without the operation at all. Yet such is clearly and evidently the doctrine laid down, a doctrine which our own experience, and we should presume that of very many others, most completely disproves; not meaning, however, by this to deny the superiority of the mode recommended by the author, when practicable, although at the same time we by no means agree with him in believing that "the chance of relief is *entirely* dependent upon the *sudden* abstraction of blood."

Speaking of the predisposing causes of convulsions, our author makes the following very interesting observation:—

"I have repeatedly remarked, among the numerous patients of the Royal Maternity Charity, as well as among others to which I have been accidentally called, that several cases have occurred soon after each other. Whether this fact ought to be attributed to mere chance, or to the agency of some *general influence* upon the female system, I must leave to others to determine in future; but I am inclined to suspect that it may be ascribed to the latter principle. And here I may be allowed to observe, that I have witnessed the occurrence of several cases during warm weather, at a time when the clouds have been charged with electric fluid, when atmospheric appearances have threatened a thunder-storm,* and when, perhaps, they have ended in one."—pp. 247, 8.

We confess ourselves much interested by this observation, and fully concur in our author's philosophical view of the matter, having witnessed, in not a few instances, phenomena equally remarkable produced in the female system, and attributable, to the best of our judgment, solely to the agency of some such *general influence* as atmospheric changes.† We presume our readers are already aware of the observations of Dr. Gulbrand, of Copenhagen, on the influence of the elasticity of the atmosphere upon the functions of the uterus, a subject which has by

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* For an interesting example of this, see case 183, p. 316.

† Denman distinctly admits such an influence in the following passage: "We may therefore conclude, that a remote cause of these convulsions is to be sought for in some change made in the constitution by the customs and manner of living in cities and large towns, especially amongst those who too zealously devote themselves to music; *or in the particular influence of the air.*"—Introd. to Midw. 5th edit. pp. 572, 3.

no means sufficiently engaged the attention of physiologists or practitioners.

Lastly, our author states, as the results of his experience in these affections, that—

"Upon an average of cases it will be found, that convulsions after delivery are more intractable and prove more frequently fatal than when they occur previously to, or during labour."—p. 269.

Of the accuracy of this position we entertain great doubt.

Appended to the section on plural births are two cases of dropsy of the membranes, one of ascites, and another of ovarian dropsy, co-existing with pregnancy,* circumstances of great importance and great difficulty in their diagnosis and other relations to practice. The quantity of liquor amnii which occasionally accumulates in the uterus is perfectly amazing! we once drew off no less than eight quarts from the uterus of a woman who died of convulsions in the ninth month of pregnancy, with a monster in utero; and Professor Carus, in the report of the Dresden hospital, mentions a woman who had three children at a birth, and discharged along with them thirty-four pints of liquor amnii.

The next section treats of *Abortion*, and we apprehend it would be very difficult to meet with a more full or satisfactory account of it, than will be found in our author's observations on that highly important subject. There is, however, one assertion made to which we cannot subscribe; our author, speaking of the cessation of the "morning sickness" as a very frequent precursor of abortion, says—

"When that process (gestation) becomes interrupted, the sickness ceases; and even in those few women, in which it is entirely absent, utero-gestation does not proceed with its usual regularity and activity."—p. 366.

Now, we do not exactly understand what is meant by utero-gestation proceeding with "activity," but we can positively declare that in several instances of the kind alluded to, where there was no vomiting, the persons so circumstanced passed through their pregnancy and labour with perfect regularity, and without the occurrence of any unfavourable symptoms whatever.

In this section there are two circumstances mentioned which force upon us the observation that our author evinces throughout either a great want of acquaintance with the writings of others, or a great aversion to refer to them. Thus, in page 392,

* P. 349, *et seq.*

it is remarked as a cause of abortion, that "the uterus in some instances appears to be unable to extend itself beyond a certain degree." Now, we should think that our author can hardly be ignorant of Madame Boivin's having published a most interesting work* expressly on this subject; if he is, he ought not to be so, and if he knew of it, he ought to have referred to it. In like manner, we have a description of that peculiar species of extra-uterine gestation in which "the ovum is arrested in its progress through that portion of the fallopian tube which passes through the uterine structure," and of which two cases are given in Part I. of these observations; see Cases 84 and 85: but no allusion even is made to the discovery of the younger Baudelocque,† nor to the admirable account of the subject by Breschet,‡ who applied to this peculiar condition the name of Interstitial Pregnancy. Omissions of this kind render a book less profitable to the reader by withholding from him the means of reference to other sources of information, and are, besides, unjust towards those who have helped us to our knowledge.

The section on *Retroversion of the Uterus* disappointed us not a little; its brevity is altogether unsuited to the vast importance of its subject; and in fact, some of the most critical circumstances connected with the accident are not noticed at all, while the changes of relation which the organ undergoes are described in a way not very well adapted to our notions of either propriety of language or anatomical accuracy; it is, for instance, said to be turned "*topsy turvy*," p. 432; and in the next page we are told that "the fundus uteri is turned back into *the folds of cellular structure between the vaginal membrane* and the rectum." What is the meaning of all this? Among the cases, however, we recognize several points of great interest. Case 209 is a most important one, and in the next we find mentioned this remarkable pathological fact:—

"At the point of adhesion between the bladder and colon, the ulcerative process had taken place, so that there was a free communication between the two cavities."—p. 451.

The concluding section is on polypus of the uterus, and we are sorry to say that it appears to us a complete failure; the account is brief, imperfect, and deficient in some of the most im-

* Recherches sur une des Causes les plus frequentes et la moins connue de l'Avortement.

† Archives Generales de Medecine.

‡ Repertoire d'Anatomie et de Physiologie.

portant details connected with that formidable complaint. Describing the characters of polypus, p. 460, the author mentions as one of them that it is "*not very sensible.*" we thought the insensibility of uterine polypi was too well established to admit of so qualified a description; again, nothing can be more meagre or less satisfactory than the account of the diagnosis between polypus and inverted uterus; pp. 464, 5. Among the cases, however, are two of great interest, more especially Case 214, being that of a woman who passed through two successive pregnancies with a polypus growing from the anterior lip of the os uteri.

Having now at some length and with considerable attention canvassed the merits of this book, we beg to assure the author that the task of criticism would have been infinitely more in accordance with our wishes, and our respect for his attainments, could we have spoken of it in terms of unmingled praise; and as we could not do this, we hope that as on the one hand strict justice compels to "nothing extenuate," so, on the other, we shall not be found to have "set down aught in malice."

As a practical treatise, and viewing it as a whole, we think it an excellent book, one that we should be very sorry not to possess, and which we can most conscientiously recommend to the attentive perusal of our professional brethren, both young and old, as affording them much valuable information, and a collection of cases, which, if we mistake not, will take their place among the standard authorities in midwifery.

We now take leave of our author, with the most perfect deference and respect for his acquirements and well earned and well established reputation; and if in the examination of his work we have pointed out some specks which dim its lustre, we hope and anticipate that each of his and our readers will be disposed to exclaim with us—

> "Non ego paucis
> Offendor maculis, quas aut incuria fudit
> Aut humana parum cavit natura."

SCIENTIFIC INTELLIGENCE.

CHEMICAL SCIENCE.

On the Combinations and Properties of Zinc.—Besides the different metals that have been long since known to exist in the zinc of commerce, M. Schindler has recognised in it the presence of uranium, and of a combination of carbon with zinc. Both are found in the blackish residue obtained by the solution of zinc in sulphuric acid; uranium, however, but in very small quantity (1 grain from 2 pounds of zinc). It is to the presence of the carburet that the odour always possessed by hydrogen obtained from commercial zinc is to be attributed. M. Schindler attributes the yellow colour which the oxide of zinc, obtained by calcination, almost always possesses, not to iron, as is generally supposed, but to the presence of a new metal which he has not been able to separate. Although oxide of zinc is easily soluble in solution of potash, it is with difficulty, and only in small quantity dissolved by water of ammonia; the presence of an arseniate or a phosphate, even in very small quantity, enables water of ammonia to dissolve it in considerable proportion. Ammonia cannot be said to throw down oxide of zinc, as the oxide retains a quantity of the the alkali which cannot be separated without great difficulty, and which attracts carbonic acid.

He has obtained an hydrate of oxide of zinc in small rhombohedral crystals, by plunging into water of ammonia, iron and zinc connected together. A very abundant disengagement of hydrogen takes place, and the crystals are deposited on the sides of the vessel, and on the zinc; these are very brilliant, and are by heat converted into the powder of the anhydrous oxide; they are composed of 1 atom of oxide + 1 atom of water.

The hydrated sulphuret of zinc can be obtained in small crystals composed of 1 atom of sulphuret + 1 atom of water; heat separates but one half of the water, the remainder cannot be separated until the sulphuret be decomposed. The common sulphate of zinc contains, according to M. Schindler, 7 atoms of water, not 5, as is generally admitted.

Besides these different bodies, he has described three basic sulphates of zinc. The first, the *Sulphas Bi-zincicus*, is soluble, uncrystallizable, and very easily decomposed. The second, *Sulphas Quadri-zincicus*, cannot be obtained in the anhydrous form; it is crystallizable and scarcely soluble in water. Heated to a temperature of 80° or 100° R., it loses a portion of its water, and its com-

position corresponds then to a salt hitherto considered to contain three atoms of oxide. The third of these salts contains eight times as much base as the neutral salt, and is insoluble in water. Heated strongly, it is decomposed into pure oxide of zinc and neutral sulphate, in consequence of the loss of the water necessary to its composition.—*Archiv. der Apotheker Vereins*, 1832. No. 2.

On some double Arseniates and Phosphates, by M. Wach.—M. Wach has demonstrated a fact of very considerable importance in medico-legal analysis, *i. e.* that the arseniate of ammonia unites to the arseniate of lime, and forms a double salt soluble in water. He prepares it directly, by taking equal parts of sal ammoniac and arseniate of ammonia; dissolving these salts in four times their weight of lime-water, and adding small portions of the latter until no more crystals are deposited. The liquor left for 24 hours in a cool place, deposits more crystals in fine groups.

The double salt thus obtained, affects the form of small stars or rhomboïdral tables. They effloresce promptly on exposure to the air; they restore the blue colour of reddened litmus; are soluble in a large quantity of water, and disengage ammonia by the action of lime or of heat. Their composition is—

	Analysis.	Atoms.	Calculated.
Lime - -	17.52	2 = 57.056	18.067
Ammonia -	5.35	1 = 17.186	5.441
Arsenic Acid -	35.83	2 = 115.395	36.538
Water - -	41.15	14 = 126.182	39.954
	9985	315.819	100.00

This result gives the formula $= 2Ca + NH^3 + 2As + 14H$.

This salt therefore contains 2 atoms of acid to 3 of base, and corresponds to the sub-arseniate and sub-phosphate of MM. Berzelius and Mitteralich.

Double Arseniate of Ammonia and Magnesia.—It is obtained by pouring sub-arseniate of ammonia into a solution of muriate or sulphat of magnesia, until no more crystalline precipitate is produced. This salt is a little soluble in water, but dissolves easily in those acids that form soluble salts with magnesia; it is composed of

	Analysis.	Atoms.	Calculated.
Magnesia - -	13.932	2 = 41.404	13.794
Ammonia - -	5.882	1 = 17.186	5.725
Arsenic Acid -	39.448	2 = 115.395	38.444
Water - -	40.733	14 = 126.182	42.037
	90.995	300.167	100.000

Formula $= 2Mg + NH^3 + 2As + 14H$.

Analysis of the Double Phosphate of Ammonia and Magnesia.

	Analysis.	Atoms.	Calculated.
Magnesia	16.242	2 = 41.404	16.156
Ammonia	6.759	1 = 17.186	6.701
Phosphoric Acid	28.858	2 = 71.501	27.906
Water	48.141	14 = 126.182	49.237
	100.000	256.273	100.000

Jahrbuch der Chemie und Physik, 1830.

On the Vegetable Substances allied to Camphor, by M. Dumas. The family of essential oils consists of many groups; the first contains those oils composed only of carbon and hydrogen, as oil of citron, of turpentine, naptha, &c. The second, the oxigenated oils, as camphor, oil of anis, &c.; and the third, those into whose composition a new element enters, as oil of mustard, which contains sulphur, oil of bitter almonds, which contains azote. In this memoir, M. Dumas undertook the analysis of the crystallizable oils, as camphor, and the crystallizable oils of anis and mint; as these bodies can be obtained easily in quantity, and their history developed consequently in a more accurate manner.

Having analyzed perfectly pure large crystals selected from the centre of a loaf of camphor, the composition of that substance was determined to be—

	Analysis.	Atoms.	Calculated.
Carbon - -	79.28	= 10	382.6
Hydrogen -	10.36	= 8	50
Oxygen - -	10.36	= 1	50
	100.00		482.6

The accuracy of the analysis is proved by the specific gravity of the vapour of camphor, which, as determined by experiment, = 5.468; and by calculation it being composed of 1 vol. camphogene + ½ vol. of oxygen; its specific gravity = (4.7634 + 0.5513) = 5.3147.

The crystals deposited from oil of lavandar gave on analysis—

Carbon - -	= 79.27
Oxygen - -	= 10.27
Hydrogen - -	= 10.46
	100.00

Results exactly the same as those from common camphor.

Although M. Dumas has not yet finished his researches on the substance to which he gives the name of Camphogene, yet it is necessary to give some account of the properties of this curious substance.

There exists a carburet of hydrogen, formed of 10 vols. of carbon. + 8 vols. of hydrogen. This carburet unites to muriatic acid, and forms a solid ether, to which is given the name of *Artificial Cam-*

phor. Camphogene produces by uniting with oxygen in the ratio of 2 vols to 5, the camphoric acid of commerce. It forms many other combinations, but those cited are sufficient to shew that camphogene possesses, like cyanogen, the property of uniting with oxygen, and like olefiant gas, the character of a base capable of neutralizing acids. It may be gotten from artificial camphor by decomposing it by lime. It may, however, be obtained in large quantity by means of the oil of turpentine of commerce.

The oil of turpentine furnishes by analysis—

Carbon	88.5	= 10 atoms or volumes,	382.6
Hydrogen	11.5	= 8 "	50
	100.0		432.6

We may therefore consider camphogene as being represented in all its properties and composition by the pure oil of turpentine.

The American oil of peppermint yields by exposure to the temperature of 32° F. large prismatic crystals of camphor, which are colourless, fusible, volatile without decomposition, scarcely soluble in water, but soluble in alcohol, ether, and oils. They have a strong taste of peppermint. They are composed of—

Carbon	77.3	= 10 vols.
Hydrogen	12.6	= 10
Oxygen	10.1	= 1
	100.0	

Thus the camphor of mint differs from ordinary camphor by containing 2 atoms more of hydrogen.

The crystals from oil of anniseed contained—

Carbon	81.40	= 10 vols.
Hydrogen	7.98	= 6
Oxygen	10.62	= 1
	100.00	

or two atoms of hydrogen less than common camphor.

This coincidence warrants the conclusion that essential oils are carburets of hydrogen, which, by combining with oxygen, produce camphors.

The oil of citron is identical in composition with oil of turpentine. —*Annales de Chemie et de Physique, July*, 1832.

On the Iodides of Platinum, and the Double Compounds which they form with the Basic Iodides, by M. Lassaigne.* —Iodine, like chlorine, unites with platinum, in two proportions, forming a proto-iodide and a bi-iodide.

* See page 385, vol. ii. and page 304, vol. iv of this Journal.—Ed.

These compounds, insoluble in water, are obtained by the re-action of the two chlorides of platinum upon the ioduret of potassium, and corresponds, as has been determined by analysis, to the two chlorides and the two oxides of platinum already known. They are black, pulverulent, and sometimes of a crystalline aspect.

A property which connects the bin-iodide with the bi-chloride, is that of uniting to the basic idurets, as those of potassium, sodium, barium, &c., and giving rise to double iodides, soluble and crystallizable, characterized by a fine red colour which they communicate to the water in which they are dissolved.

M. Lassaigne has also stated that he has observed that hydriodic acid unites with the bin-iodides of platinum, and form a deep red combination, soluble, crystallizable, fixed at ordinary temperature and pressures, and decomposed but slowly in vacuo. He promises to enter more particularly into the description of these bodies in a future memoir.—*Journal de Chimie Medicale, October*, 1832.

New Native Sulphate of Copper.—This mineral, discovered by Berthier, comes from Mexico; its gangue is a white granular quartz rock, passing into sand-stone. This gangue is penetrated by lamellar red protoxide of copper, and another cuprose matter of a green colour. The protoxide is in veins or lumps; the green matter is dull, granular, nearly earthy; sometimes of a clear green like the carbonate; at others, greyish green. The mineral can be purified very much by washing. It loses by calcination ten per cent. of its weight. It melts easily with black flux, and produces 0.36 of very pure copper.

The analysis of a very pure specimen, containing but traces of the protoxide, gave—

Deutoxide of copper - -	0.459
Sulphuric acid - -	0.115
Water - - - -	0.121
Quartzose gangue - -	0.305
	1.000

or abstracting the gangue—

Deutoxide of copper - -	0.662
Sulphuric acid - - -	0.166
Water - - - -	0.172
	1.000

It is evident that the green matter is the hydrated sub-sulphate of copper; whose formula is $Cu^4 + su^2 + 4\,Aq$: composed of—

Deutoxide of copper - -	0.6790	= 4 atoms
Sulphuric acid - - -	0.1707	= 1
Water - - - -	0.1503	= 4

It constitutes a new species, which is allied to brochantite, analysed by Magenus.—*Annales de Chimie et de Physique, Aout*, 1832.

Colouring Matter of Cornelian.—Hitherto it has been considered that the cornelian was coloured by the oxide of iron; an observation of Dufay's, however, was opposed to such an opinion; he found that if cornelians be heated alone in such a manner that they do not split, their colour is not altered, but that if they be covered with a cement containing oxide of iron, they become white wherever the cement touched the stone. M. Gaulty de Claubry was induced to turn his attention to the subject by the above fact; and, on experiment, he found that when powdered cornelians were mixed with black oxide of copper, in a porcelain retort, and heated to redness, carbonic oxide and carbonic acid were disengaged, and some pyro-acetic acid, and some pyro-genic oil formed, proving that the colouring matter of the mineral of an organic nature.—*ibid.* 446.

Action of the Hypo-nitric Acid on Oils, by Felix Boudet.—Of all the viscid vegetable oils that which, in consequence of its commercial importance, is most often adulterated, is olive oil. Neither its coagulation, or the diagometer of M. Rousseau, are of sufficient value, and the test of M. Pontet is generally used, although its mode of action is not known. This re-agent is prepared by acting with 7½ parts of nitric acid of 38° (Beaumé) on six parts of mercury, there are formed proto-nitrate, deuto-nitrite, and hypo-nitrate of mercury; but it is not known which of these salts acts in solidifying the oil. M. Felix Boudet has, however, proved that the proto-nitrate and deuto-nitrate are useless, and that it is by the hypo-nitric acid of the hyponitrite of mercury that the solidification is produced.

Other oils than that of olives may be solidified by this means, as the oils of sweet and bitter almonds, nut oil, castor oil, oil of colya, all possess this property, but require more acid and a longer time than the oil of olives.

The solid fatty matter formed by the action of the hypo-nitric acid on olive oil, almond oil, or on nut oil, M. Boudet has found to possess properties distinct from all other fatty bodies, and proposes to give to it the name of *eliadine*.

Eliadine, which resembles stearine very much, fuses at 36° cent., and dissolves in every proportion in sulphuric ether. It requires 200 parts of boiling alcohol sp. gr. 0.897 to dissolve 1 of eliadine. The solution becomes turbid on cooling without crystallizing; treated by caustic alkalies, aided by heat, eliadine saponifies easily, and forms a soap soluble in water. Muriatic acid put in contact with this soap decomposes it and separates an acid fatty matter, under the form of a fluid oil, which congeals on cooling into a solid crystalline mass, which M. Boudet terms *Eliadic Acid*. This acid melts at 44° cent. and reddens litmus strongly. Soluble in boiling alcohol, it is deposited on cooling in brilliant mother-of-pearl coloured plates like boracic acid. When heated it distils in great part undecomposed; it

neutralizes the alkaline bases, and even expels carbonic acid from some carbonates. Many of the saline combinations of elaidic acid have been formed, of which the elaidates of potash and soda are most worth notice.

The solid matter formed by the action of hypo-nitric acid on castor oil, differs considerably from elaidine; it is yellow, translucid, like wax, and striated internally in a sort of confused crystallization: he terms it *Palmine*. When pure, palmine is quite white, and presents a very waxy fracture. Its point of fusion varies between 62° and 66°; it gives out an odour similar to that of the volatile oil obtained by distilling castor oil; it is very soluble in alcohol and ether; by alkalies it is converted into a peculiar acid, the *Palmic*. This acid, when pure, melts at 50° cent., crystallizes in white silky needles; dissolves in ether and alcohol; reddens litmus; neutralizes the alkalies, and decomposes the alkaline carbonates. It may be distilled without alteration.—*Annales de Chimie et de Physique, Aout*, 1832.

Mode of Preparation of Citrate of Quinine, by Dr. Galvani, *Emeritus Professor of Pharmacy at Venice.*—Let one part of sulphate of quinine be dissolved in forty parts of pure boiling water, and, at the instant, pour gradually into the solution acidulated citrate of soda; at first litmus paper is not reddened by the liquor, but on adding gradually more citrate of soda, the paper is turned red, which is a sign that the decomposition has been perfectly effected, and that citrate of quinine is formed. The liquor is to be filtered while near boiling, and on cooling the salt crystallizes; at the end of six hours, the crystals are to be separated from the mother liquor, drained, and washed with a little distilled water, and pressed. They may be dried between folds of bibulous paper, in a stove with a very gentle heat. Having evaporated the mother water more crystals are obtained, and the whole of the salt is thus gotten pure.—*Annali Universali di Medicina, Luglio*, 1832.

On the Formation of Hail, by Professor De Perevoschtchikoff.—To explain the cause of the formation of hail two questions must be resolved, how are the nuclei of the hailstones formed, and how do they acquire a considerable volume? Now there is now doubt but that these nuclei, nearly always transparent, are the frozen drops produced by the reunion of the innumerable globules of which the clouds are formed. But it is not easy to explain the cause of the cooling of the clouds, for the hail constantly falls during the hottest portion of the year. Guyton de Morveau, and Volta, admitted that the cooling is due to rapid evaporation depending on the intense action of the solar rays, on the dryness of the atmosphere, and on the influence of electricity which accelerates evaporation; but Bellani thinks that this opinion is erroneous. To determine whether it be exact, M. Perevoschtchikoff has made experiments in which he used two thermometers, of which one had a recurved reservoir,

the cavity of which contained a teaspoonful of liquid. The two thermometers were exposed to the sun, and at the same time alcohol and water submitted to its action.

It results from his experiments, made with each of these liquids, that a prompt evaporation produces cold even under the direct rays of the sun; and that the temperature of a liquid which evaporates cannot rise except the evaporation is very slow. There is then no doubt that the cause of the primitive formation of the hail, arises from the rapid evaporation of the little globules of which the clouds are formed.

Volta supposed that the hailstones enlarged by their alternate contact with two clouds differently electrified. M. Perevoschtchikoff thinks their increase of size may be better accounted for as follows:—When the clouds form many thick layers, they become an obstacle to the free distribution of radiant calorific, which being then reflected to the earth, produces that stifling heat which generally precedes the storm. Above the clouds the sky is perfectly serene, and does not prevent the radiation from the superior portion of the clouds. This is the principal cause of their cooling, from whence arises the formation of the hailstone nuclei. The weight of these bodies not allowing to remain suspended in the air, they fall to the ground, and in their descent passing through numerous layers of clouds, they acquire at each a new opaque coating of liquid, congealed at the surface, so that the number of layers of which the hailstones consists, depends on the number of strata of clouds. Thus electricity is not (according to M. Perevoschtchikoff,) the necessary cause of hail, it is only an accidental concomitant, and the lightning rods erected in gardens to defend them from hail are not of any real use.—*Transactions of the Imperial Academy of Sciences of Moscow*, vol. 4, p. 127.

ANATOMY AND PHYSIOLOGY.

Symmetry of Vital Organs.—The most essential difference between the organs of animal and those of organic life is, according to M. Bichat, the symmetry of the former, and the irregularity of the latter. In laying down this law, Bichat considered only man and the animals most nearly allied to him; he did not take into account the lower animals, that is by far the most numerous division. His proposition therefore, deduced from a very limited observation, is far from being general. From the facts brought forward by M. Flourens in a memoir read to the Academy of Sciences, it results that there is no organ of organic life, as the lungs, the heart, liver, spleen, pancreas, &c., which does not become symmetrical in some point or other of the scale, so that the symmetry of the organs, masked by circumstances in some divisions, reappears in the general outline, and their non-sym-

metry, which, considering only man and the mammalia, appears the universal law, is really only the exception to it.

From all the facts stated in his memoir, M. Flourens concludes, that, considering the whole animal kingdom, symmetry is evident in the apparatus of organic life as in those of animal life, and that in both cases the symmetry is effected in the same manner, i. e. by the lateral position of double organs, and by the position in the median line of single organs; and their organic life has its two sides equally with animal; that their life consists of two lives, and each of these lives of two symmetrical halves. That this duality of life, and this duality of the vital organs, exist from the bottom to the summit of the scale; and that thus there are two nervous lives, and that the nervous apparatus of organic life is double in all animals, as that of animal life.

Thus, then, organic life is not less symmetrical than animal life, and if some of these organs appear very often more irregular than the others, it is easy to see that this irregularity arises from purely accidental circumstances, as the form of the body, and the mobility of these organs. By the general form of the body these organs are most exposed to be pushed from their true situation, and being suspended rather than fixed in their proper places, they easily find themselves to displacement. Moreover, it is not only in the organs of organic life, that a change in the general disposition of the body alters the position of organs; for it is well known that a simple change of this kind suffices in the pleuronectes, to place both eyes on the same side of the body.

We see, therefore, that every time the form of the body allows it, the apparatus of organic life are symmetrical, placed laterally if they are double, and in the median line if they are simple. The intestinal canal is an excellent instance of this. In fact, as a single organ, it should be placed in the median line, but as in most animals it is longer than the body, it must fold itself and deviate from the median position; but as soon as its length ceases to exceed that of the body, as in the lamprey, it returns to it, and becomes a perfectly symmetrical organ.—*Archives Generales de Medicine, July*, 1832.

Hermaphrodism.—M. Rudolphi, in a memoir presented to the Academy of Sciences of Berlin, October 20th, 1825, describes a case of hermaphrodism of a very rare kind in the human species. It was met with in the body of a child, who had died, as it was said, seven days after birth, but the development would lead to the supposition of its being three months of age. The penis was divided inferiorly, the right side of the scrotum contained a testicle, the left side was small and empty. There was a uterus which commenced at its superior and left portion with a fallopian tube, behind which was an ovary destitute of its ligament. On the right side there was neither fallopian tube, nor ovary, nor ligaments, but a true testicle, from the epididymis of which there arose a vas deferens. Below the uterus, there

was a hard, flattened, ovoid body, which when divided exhibited a cavity with thick parietes. The uterus terminated above, in the parietes of this body, and at the right the vasa deferentia, without however, penetrating into its cavity. Finally, at its inferior part there was a true vagina which terminated in a cul-de-sac. The urethra opened into the bladder, which was normal. The anus, rectum, and the other organs were naturally formed. M. Rudolphi considers the ovoid body, situated beneath the uterus, as the prostate and vesiculæ seminales in a rudimental state.—*American Journal, February*, 1832.

Structure and Formation of the Membranes of the Ovum, by Dr. Lee.—The difficulty of determining the precise period of impregnation, must render all observations on the human ovum before the middle or near the end of the second month more or less vague and uncertain. After this time the organization of the ovum is so far advanced, that the membranous layers which envelope the embryo, and the form of the embryo itself, can be clearly perceived with the naked eye. The amnion is then a transparent sac, which contains the embryo and the fluid in which it floats. The chorion, covered with villosities on the external surface, surrounds the amnion, but is separated from it a short distance by the interposition of a gelatinous fluid, which is deposited in a very delicate reticular texture. There is a third membranous layer, namely, the decidua, which completely surrounds the chorion, and connects the ovum with the inner surface of the uterus. This, as is well known, appertains not properly to the ovum itself, but is a production of the lining membrane of the uterus; for in cases of extra-uterine conception, the chorion and amnion alone envelope the embryo, and a deciduous membrane has been found lining the cavity of the uterus.

In a specimen, however, of Fallopian tube conception, which I assisted in removing from the body of a lady who died about the eighth or ninth week of pregnancy from rupture of the tube and internal hæmorrhage, no organized deciduous membrane lined the inner surface of the uterus, but the whole of it was coated with a thin layer of soft flocculent albumen.

It is to Dr. William Hunter that the merit is due of having first accurately described and represented in his engravings of the gravid uterus, the disposition of the uterine and reflected deciduous membranes. He has described the decidua as a very soft, tender, pulpy membrane, which lines the whole cavity of the fundus uteri, reaching to the beginning of the cervix, and passing a little way within the origin of the Fallopian tubes, at which place it is perforated by small openings. Besides that portion of decidua lining the cavity of the fundus uteri, another portion forms an external covering to that part of the chorion, which is not in contact at the inner surface of the placenta, and which has named decidua reflexa. The ovum lies between a part of the decidua vera, or that lining the inner surface of the uterus, and the decidua reflexa, both of which unite into one membrane at the edge of the

placenta; or the decidua vera divides itself at the edge of the placenta into two laminæ, one of which passes between the placenta and the inner surface of the uterus, and the other forms the decidua reflexa, which covers the outer surface of the chorion as the pericardium does the heart.

When the decidua reflexa is beginning to pass over the chorion, there is at an early period of pregnancy, an angle formed between it and the decidua, which is often extremely thin, and perforated with small openings; so as to look like a piece of lace. In proportion as pregnancy advances, the decidua reflexa becomes gradually thinner and thinner, so that at the fourth month it forms an extremely fine layer covering the chorion. It comes at the same time more and more closely in contact with the decidua which lines that part of the uterus to which the placenta is not fixed, till at length they adhere together.*

Dr. Hunter has offered no explanation of the manner in which the decidua reflexa is formed, and Dr. Baillie, who completed his description of the gravid uterus, admits that the manner in which the decidua envelops the ovum has never yet been observed, and therefore can only be a subject of conjecture. The obscurity which has hitherto prevailed on this subject is probably referable in a great measure to the difficulty which has been experienced by anatomists of procuring the gravid uterus for dissection at a sufficiently early period, with the contents undisturbed. The extent of this difficulty will readily be estimated when I state, that the most early case of pregnancy which Dr. Hunter ever had an opportunity of examining in the dead body was of three complete months, and that his description of the contents of the gravid uterus before this period, was drawn entirely from recent ova expelled in abortion.

The greatest diversity of opinion still prevails respecting the structure and mode of formation of the deciduous membranes, though they have been carefully investigated since the time of Dr. Hunter, by many distinguished physiologists. Neither Lobstein, Krummacher, Gardien, Breschet, Dutrochet, nor Velpeau, have been able to discover the openings in the decidua, corresponding with the orifices of the Fallopian tubes, and the last of these authors has concluded from his researches, not only that the decidua invariably forms a shut sac in the uterus before the descent of the ovum, but that it is an inorganic layer, and wholly destitute of blood-vessels during the entire period of gestation. According to this view of the disposition of the parts, it is supposed that as the ovum passes through the Fallopian tube into the uterus, it pushes before it the deciduous membrane lying across the orifice of the tube, and thus acquires the thin membranous covering termed decidua reflexa. "L'ovule, après avoir parcouru la trompe, deprime necessairement la membrane ca-

* An Anatomical Description of the Human Gravid Uterus, by W. Hunter, M.D. pp. 79, 83. London, 1794.

duque, pour se glisser entre elle et l'uterus, à la surface interne duquel il finit par se coller; dès ce moment, la membrane préexistante se trouve formée de deux portions; l'une, très grande, tapissant tout l'interieur de la matrice, à l'exception du point qui est en contact avec le germe, porte le nom de caduque uterine ou interne; l'autre, très petite, deprimée par la moitié inferieure de la vesicule fecondée qu'elle enveloppe, constitue la caduque reflechie interne, ou l'epichorion. L'entendue de la premiére augmente en même proportion que celle de l'uterus, l'agrandissement de la seconde suit, de toute necessité, l'acroissement du germe. Aussi la cavité qui les separe, et qui n'est autre que la cavité deformée de l'ampoule primitive, est elle d'autant plus considerable qu'on s'eloigne moins des premiers temps de la gestation."*

Dr. Burns, who has enjoyed several opportunities of examining the contents of the gravid uterus within a month after conception, has given the same mechanical and erroneous explanation of the formation of the decidua reflexa. "In every case," he observes, "the decidua, consisting of two layers, is completely formed before the ovum descends. Where the embryo passes down through the tube, it is stopped when it reaches the uterus by the inner layer which goes across the aperture of the tube, and thus would be prevented from falling into the cavity of the uterus, even were it quite loose and unattached. By the growth of the embryo, and the enlargement of the membranes, this layer is distended and made to encroach upon the cavity of the uterus, or more correctly speaking, it grows with the ovum. This distention or growth gradually increases, until at last the whole of the cavity of the uterus is filled up, and the protruded portion of the inner layer of the decidua comes in contact with that portion of the uterus itself which remains attached to the outer layer."†

On the 10th of March, 1832, a young woman who was in the second month of pregnancy poisoned herself with oxalic acid. The uterine organs were removed from the body, without disturbing their contents, by W. B. Hutchinson, Esq. house-surgeon to the St. Marylebone Infirmary, and to his kindness I am indebted for the preparation of the parts now exhibited to the Society, and for the opportunity which has so seldom been enjoyed by anatomists, of dissecting the gravid uterus before the third month of conception. Both Fallopian tubes in this case were pervious, and the ovum being attached by the placenta to the inferior segment of the uterus, it was obvious that it could not have pressed before it the decidua reflexa in the manner usually represented.

Description of the Uterus and appendages of a Young Woman who poisoned herself in the second month of pregnancy.—The

* Traité Elementaire des Accouchemens, t. i. p. 232.
† Principles of Midwifery. London, 1820, p. 184.

uterus had acquired double the size which it usually exhibits in the unimpregnated state. It was five inches long, three and a half in the greatest lateral direction, and two inches in the antero-posterior diameter.

A longitudinal incision was carried down the middle of the posterior surface, crossed by a transverse one parallel to the entry of the Fallopian tubes. The thickness of the parietes of the uterus, though greater than in the quiescent state, were not proportionate to the general increase in the dimensions of the viscus—they were four lines at the fundus, and six lines at the cervix, gradually increasing towards that part; the chief difference was observable in the already enlarged size of the uterine venous sinuses.

The deciduous membrane, which closely adhered to the inner surface of the uterus, was then laid open by two incisions parallel with the longitudinal and transverse incisions previously made in the parietes of the uterus. The cavity of the uterus being exposed, the ovum, about the size of a pullet's egg, came into view, and was observed to be situated towards the lower part of the uterus. The part of the cavity to which it adhered was included between two parallel lines, drawn, the one transversely across the uterus at the distance of half an inch below the entry of the Fallopian tubes, the other at two inches distance from the os tincæ: Consequently the ovum was situated altogether below the entry of the Fallopian tubes, and was unattached both at its upper and lower part, leaving a free space or canal between it and the os tincæ, corresponding to the shape of the elongated cervix, and a much larger cavity between the upper part of the ovum and the fundus uteri. But as this latter space is not only inexplicable on the received theories of the formation of the decidua reflexa, but directly at variance with these, it demands a particular and minute description.

Intervening between the superior and unattached surface of the ovum and fundus uteri, was a broad but shallow cavity, measuring three inches in the lateral and one inch and a half in the antero-posterior diameter, and from one to two lines in depth. The upper concave surface of the cavity, formed by the decidua lining the fundus uteri, or decidua vera, was irregular and slightly reticulated. The inferior convex surface formed by the decidua covering the ovum, or decidua reflexa, was perfectly smooth, resembling the external serous surface of the uterus. Into this cavity the Fallopian tubes freely opened by palpable orifices; that on the left side, by which the ovum had entered the uterus, being rather more than a line in diameter, that in the right rather less. The cavity thus formed between the decidua lining the fundus uteri and the decidua covering the upper and unattached portion of the ovum, was filled with a red-coloured serous fluid.

The ovum was next laid open by an incision through the chorion parallel with the longitudinal incision of the uterus, and the amnion enclosing the embryo was brought into view. The placenta was situ-

ated principally over the cervix and posterior part of the body of the uterus, and the decidua closely adhering to the placenta passed across the upper part of the cervix uteri, in the form of a thick reticular membrane. The decidua was then observed to extend upward between the uterus and chorion, every where firmly connecting these together as high as the entrance of the Fallopian tubes. From this point the deciduous membrane was spread out in two different directions, viz. over the upper convex and unattached surface of the ovum, and over the whole concave surface of the fundus uteri, so as to form the cavity above described, into which the Fallopian tubes freely opened. The deciduous membrane interposed between the ovum and uterus exhibited the usual degree of development and of organization. Where it passed off from the uterus to cover the upper surface of the ovum, it was somewhat thicker than elsewhere, and was divisible into two distinct layers. The tufts of vessels of which the placenta is constituted were more distinct from each other than they subsequently become, and they filled the entire space between the chorion and decidua. The appearance of a division of the placenta into a fœtal and maternal portion did not exist.

If the statements of the authors above alluded to, and the generally received opinions respecting the formation of the decidua reflexa be well founded, it would follow, that in all cases the ovum would attach itself to the uterus by the placenta, either directly over the edges of the orifice of the Fallopian tube, through which it had descended, or to its immediate vicinity, and that the deciduous membrane would never be found interposed between the uterus and placenta, as it invariably is. The facts which I have now adduced clearly demonstrate, that the Fallopian tubes are open in the early months of gestation; that the ovum may attach itself by the placenta to the fundus body, cervix, or over the os uteri, and that the deciduous membrane forms neither a shut sac nor inorganic layer, prior or subsequent to the arrival of the ovum in the cavity of the uterus. These circumstances are also strictly in accordance with the fact, that when the ovum can first be perceived, it lies loosely imbedded in the soft flocculent albuminous matter which at this period of gestation coats the inner surface of the uterus, and that this pulpy semifluid matter becomes gradually converted into those delicate organised membranous layers, by which the attachment of the ovum to the uterus is so firmly secured during the whole period of pregnancy. The albuminous substance interposed between the uterus and ovum becomes the decidua uteri, or decidua vera, while the albumen which envelops the unattached hemisphere of the ovum becomes the decidua reflexa. To whatever part of the uterus the ovum adheres by the placenta, its relation to the deciduous membranes will be the same, the decidua vera forming the connecting membrane between the ovum and uterus, and the decidua reflexa covering only that part of the chorion which hangs loose within the cavity of the uterus.

From the circumstances now detailed, it also follows that the

names decidua uteri and decidua reflexa are improper, in so far as they are founded on speculative ideas regarding the mode in which these membranes are formed, and which, if not positively erroneous, are at least by no means demonstrated. It would be preferable to distinguish these membranes not in this hypothetical manner, but from their anatomical relations, which must be true, whatever be the fate of our conjectures; and I therefore propose to denominate them respectively decidua uteri and decidua ovuli, or uterine and ovuline decidua.*

At the end of the fourth month of gestation, when the ovum has enlarged so as to fill the entire cavity of the uterus, the decidua uteri and the decidua ovuli coalesce, and during the remainder of pregnancy form a thin, soft, pulpy membrane, which is closely united to the inner surface of the uterus, by numerous small tortuous blood-vessels and flocculent fibres. At this period also the villosities of the chorion have disappeared, where the placenta does not exist, and the amnion, the chorion, and the decidua, have become so firmly adherent to one another, that they constitute a membranous sac consisting actually but of one layer, though susceptible of being artificially divided into three distinct laminæ. M. Velpeau asserts, that the decidua uteri, and decidua ovuli, remain distinct membranes until the end of pregnancy; but in seven gravid uteri near the full period, which I have examined, I have never perceived more than three concentric layers in any part of the fœtal membranes. The existence of numerous blood-vessels, proceeding from the lining membrane of the uterus to the decidua, which has also been denied by the same writer, is clearly demonstrated by the preparations of the gravid uterus in the Royal College of Surgeons in London: and it scarcely admits of a doubt, that these vessels serve not merely to supply nourishment to the membranes which envelop the fœtus, but that they enable the amnion to secrete the fluid contained within its cavity. The numerous small arteries which proceed from the inner surface of the uterus to the decidua covering the placenta, are also, I conceive, solely destined to perform the function of supplying this organ with nourishment, and not, as has generally been supposed, to effect certain changes in the fœtal blood as it circulates in the vessels of the placenta.—*London Medical Gazette*, December, 1832.

PATHOLOGY AND THERAPEUTICS.

Use of Cyanuret of Mercury in Syphilis.—Professor Chaussier had first employed this medicine in syphilitic diseases, but its use

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* The term ovuline decidua I have adopted at the suggestion of my ingenious friend, Mr. Owen.

had been totally given up, when M. Parent having found in some trials, to which he had been in a great measure led by chance, very great benefits result from its use, again proposed to place it amongst our means of combating that formidable affection. The advantages to be derived from its employment are, as he states, as follows. Being more soluble than the bichloride, it is more easily absorbed, and its action consequently more rapid. This has been proved by a long experience. None of those symptoms of deranged digestion which frequently oblige us to give up the use of sublimate, are met with during the employment of cyanuret of mercury. The latter also is not decomposed by the animal tissues, corrosive sublimate is so the instant it comes in contact with them. The alcalis, &c. can be exhibited without any decomposition, as also decoctions and infusions containing tannin and gallic acid.

At the commencement of syphilitic affections M. Parent commences by giving $\frac{1}{16}$ of a grain in the day, then $\frac{1}{8}$, $\frac{1}{4}$, or finally $\frac{1}{2}$; he seldom exceeds this last dose, although he has met with individuals who bore with ease 1 oz. even 1¼ grains per diem. He uses it in the form of gargles, or pills, or alcoholic solution internally, externally as ointment or lotion.—*Archives, de Medicine, July*, 1832.

Epilepsy connected with Scrofulous Disease of the Cerebellum. R. S. aged 36, was carried to the Hôtel Dieu on the 7th October, 1831, while under an epileptic fit—he had been subject to such attacks for a long time, and they returned usually every month. When he coughed, a sharp pain was felt at the back part of the head. There was a swelling at the lower part of the dorsal region, caused by the projection of the lowest dorsal and upper lumbar vertebræ; this had existed for six or seven years. This patient had a great reluctance or an inability to stand for any length of time, or move forward; yet he could walk if he chose to compel himself. He died very suddenly, and the dissection revealed the following appearances. The swelling on the back arose from the bunching out of the spinous processes of the vertebræ; the bodies of which were softened and wasted—the dura mater of the medulla at the part was diseased, and the canal filled with purulent matter. In the upper lobe of the left lung, was found a tuberculous mass, passing into a chalky state; and quite at the summit of this lobe there was an empty pouch or cavity, lined by apparently serous membrane.

The substance of the cerebrum was much firmer than usual, as if it had been steeped in an astringent fluid. The lateral ventricles were enormously distended by a lemon-coloured serum, amounting to 4 or 5 oz. in quantity. The cerebellum was also much firmer in consistence, and on dividing it vertically a tuberculous mass in the state of infiltration into the medullary tissue and about an inch in extent, was found to rest on the posterior wall of the 4th ventricle, which had thus been considerably contracted in size.

Reflections. It is well known that many physiologists have placed the seat of physical love in the median, or central part of the

cerebellum; now this was exactly the part which was found diseased in the present case; and yet the man retained all account desires; which were neither increased, impaired, or perverted.

The opinion of M. Magendie that the median lobe of the cerebellum is, as it were, the regulator of the voluntary movements of the body may be supposed to be neither confirmed, nor confuted by the particulars observed in this patient, in consequence of the co-existence of the spinal disease.

An interesting case, however of tubercular disease in the median part of the cerebellum, without any complication, is detailed in the Bulletin de la Société Anatomique. A soldier aged 20 suffered from excruciating head-aches, general weakness, tottering of the limbs, and great reluctance to be moved; he voided his urine and fæces in bed; but whether this proceeded from a paralysis of the sphincters, or from sheer unwillingness to be disturbed in bed, could not be ascertained. Appetite considerable—mental faculties impaired. On dissection, the lateral ventricles were found distended with water; and on the upper part of the cerebellum close to its median line, a tubercular deposit of a yellowish colour, about three inches in circumference, was observed. The substance of the cerebellum was in a state of ramollissement for the space of two lines round the tumour, with which, however it was not incorporated. This case therefore corroborates the opinion that cerebellar disease generally causes a great diminution in the muscular powers of the lower extremities.

Another reflection arising from the study of the case which we have related is; in what manner are we to explain the periodicity of the epileptic seizures? they occurred in the present instance usually once every month. Are we to regard the tuberculous disease of the cerebellum as the "fons mali"? Our answer will probably be in the negative, and the reason we assign is, that the morbid structure could not be changed in its form or extent, at stated intervals. Perhaps, therefore, we should take into our consideration the action of the cephalo-spinal fluid, to which Magendie has drawn the attention of medical men. The lateral ventricles being much distended with water; and the diseased mass compressing the fourth ventricle, and consequently obstructing the opening of communication, discovered by M. Magendie, between the fourth ventricle, and the sub-arachnoid cellular tissue of the medulla, all the effused fluid was necessarily collected in the cerebral ventricles, and to such an extent at certain intervals, as to overcome the pathological reaction of the brain, and thus to induce the irregular movements of epileptic convulsions.—*Journ. Hebdom. Johnston's Journal.*

Chloride of Lime in Purulent Ophthalmia.—We noticed, in a preceding number of this Journal, the observations of Edward Gamba on the employment of the chloride of lime, in the treatment of gonorrhœa. We now call the attention of our readers to the remarks of Dr. Herrenberg, of Berlin, relative to the use of the same article, in purulent ophthalmia. He was originally induced to give it a

trial, in these cases, from observing its great efficacy in checking all profuse mucous secretions. The following cases are detailed, in proof of the remedy:—

Traugott Hitzke, aged twenty-four years, of a healthy and robust constitution, had spent the early part of his life without being affected with any very important disease. While stationed in the garrison at Berlin, he became affected with a severe ophthalmic inflammation, which was supposed to be of the rheumatic kind, and for which he was confined three weeks in a military hospital. On the 8th of May, a few days after he had connexion with a female, he observed a slight discharge from the urethra. Under these circumstances, influenced by the advice of an old woman, who recommended him to wash his inflamed eyes with his urine, he performed that operation several times; but the consequence, which, in most cases, would perhaps have presented nothing remarkable, were here truly formidable, in consequence of the gonorrhœal affection under which the patient laboured. A few hours after the urine had been applied to the inflamed organ, a heavy smarting sensation was experienced about the internal angles of both eyes. To relieve this pain, he repeated the application of the urine; and in the course of a quarter of an hour the pain was greatly increased, and the eyes became red, and intolerant of light. In this condition he remained 24 hours, without calling for surgical aid. When Dr. Herzberg first saw him, the upper eyelid was swollen like a bladder, and was folded, as it were, over the lower lid, which was also swollen. The cilia were directed inwards, and from the eye a yellowish coloured purulent fluid was discharged, similar in its character to the discharge from the urethra. When the lids were separated, which was difficult to accomplish, this fluid flowed away in a stream. The conjunctiva of the lids and of the ball of the eye was rendered so prominent, by the tumefaction, as to form a kind of dyke. It presented a dark red colour, and a profuse greenish yellow, purulent secretion flowed from every point. Profoundly situated in the ball of the eye, a darkish coloured spot could be discerned, which was supposed to be the cornea. These symptoms were most strongly developed in the right eye; though the patient complained of a painful sensation of pressure in both. The pulse was full, hard, and frequent, and there was a frequent sensation of chilliness. The discharge from the urethra continued. The patient was bled to the amount of four porringers, was directed to take two grains of calomel, four times a day, and was put upon a severe diet. As a local application, the following was ordered to be injected into the eye, and applied externally, every ten minutes: ℞. Calc. oxymuriatis, ʒss.; Aq. distill. ʒvj.: solve. In less than two hours the discharge assumed a whitish appearance. On the 11th, the quantity of the secretion was greatly diminished, and it was much thinner and less consistent than it had been before. The tumefaction of the conjunctiva had subsided, still, however, the condition of the ball of the eye could not be determined. As the pain in the right eye continued, after the venesection, twelve leeches were applied in its vicinity, and the other re-

medies were continued. 12th. The swelling still more abated; the discharge of a whitish appearance, and less copious. In proportion as the tumefaction subsided, the cornea was exposed, covered with ulcers. Tinct. opii. ʒi. was added to the collyrium, which was directed to be continued as before. From this time, the improvement was progressive. On the sixth day after the commencement of the calomel, evidences of salivation making their appearance, that remedy was discontinued, and a gentle saline cathartic was directed. The collyrium was continued until the 15th day from the commencement, when there being no further discharge, it was left off, and the tinct. opii. crocata was applied to the cornea, by means of a fine camel hair pencil. This was continued until the 8th of May, when the ulcers of the cornea were entirely healed.

In the following case, the syphilitic character of the disease is doubtful, though the father was affected with it, and the mother with fluor albus.

A child of the name of L. Burnmeister, became affected, on the evening of the third day after birth, with frequent sneezing, with redness of the eyes, and profuse lachrymal discharge. The inflammation progressed rapidly, and by the fourth day, the lids were swollen to the size of a walnut, and a profuse blennorrhœal discharge issued from the eye. The ball of the organ was entirely concealed by the lids, which could not be opened. Two leeches were applied to each eye and one grain of calomel was directed to be given, three times a day. The following collyrium was ordered to be injected between the lids, and applied externally, every ten minutes: ℞. Calcaria oxymuriat. ʒi.; Aq. distill. ℥vj. Solve. In thirty-four hours the character of the discharge had improved, and the quantity was considerably diminished. The tumefaction, and other symptoms subsided, from day to day. The wash was finally exchanged for the tinct. opii. simp. which was applied by means of a camel hair pencil, and by the 14th day, the cure was completed.

In the case of Otto Schoppen, aged three weeks, where the eyes were in a similar condition, the chloride of lime, unassisted by any other remedy, produced a complete cure in a few days.

Maria Küstern, aged six months, of a feeble constitution, and born of a mother who suffered much from fluor albus, became affected, on the third day after birth, with the ophthalmia neonatorum. Against this all the usual domestic remedies were employed for the space of eight weeks, and amongst others the urine of the whole family, from the father and mother down. The same sponge which was employed in washing the child's eye, the mother used to wash her face. In twenty-four hours, the left eye was affected with an acute inflammation, and in forty-eight hours, an intense ophthalmic blennorhœa was established. In the case of the child, the chloride of lime was employed, as above; but in that of the mother, six leeches were applied to each eye, and two grains of calomel were given every three hours; ʒij. chloride of lime were dissolved in six ounces of wa-

ter, for a collyrium. On the third day, the calomel was discontinued, and by the tenth day, both mother and child were cured.

The result of these cases, as well as of some others to be found in the records of the day, seem to speak favourably of the remedy in question, both in the gonorrhœal ophthalmia, and in the simple mucous form of the disease. It deserves, at least, a fair trial.—*Journal für Chirurgie and Augenheilkunde, Band* 14. *heft* 4.

Cure of Tic Douloureux by Stramonium.—A young lady who had suffered for many years from tic douloureux, the attacks of which terminated sometimes by the swelling of the cheek or of the lip of the affected side, had employed a number of remedies without success. Dr. Pott cured her in the space of six weeks, by applying the actual cautery to the arm, and giving her, internally, eight or fifteen drops of tincture of stramonium every three hours.—*Beitraege Mecklenburgischen Aertze*, 1332. *B.* 1, *H.* 2.

Affections of the Head produced by Quinine.—Quinine was found to produce some remarkable affection of the head, in almost every case in which it was administered at Jubbulpore, in 1829. In one officer it caused transient deafness; in another vertigo; in a third intolerance of light, to such a degree, that the medical men were alarmed lest effusion on the brain should take place. A fourth European was subject, for a short time, to much confusion of ideas, and all sorts of chimeras after taking Quinine. A Portuguese was affected with tinnitus aurium, and deafness. In all these cases the Quinine acted favourably on the fever, for which it was administered. In the same note, favourable mention is made of the efficacy of Rohena Bark (Swietina Febrifuga) in fever cases; but large doses of that remedy were also found to produce vertigo.—*Calcutta Transactions*, vol. v.

Action of Ergot of Rye, by Dr. Shanahan of Dublin.—Perhaps the following lines respecting the action of ergot may not be uninteresting. This drug is well known as one of the medicinal substances given to excite the parturiant action of the uterus, it has likewise been considered a remedy, not only uncertain in its action, but apt to excite hemorrhage; having used it frequently without any appearance of the latter consequence, and as it is apt to fail when given *prematurely*, I think, from a considerable number of cases, where the remedy has been used, the following peculiarity may be observed, when its exciting properties has been evinced; namely, a peculiar sensation of fulness, arterial excitement, or pain in the anterior portion of the cerebrum. Any one, or all of those symptoms, generally provide, or accompany the action which is produced; and I have

never seen a case where the exciting qualities of the drug was well marked, without producing the above mentioned symptoms.

I think, that when an impatient practitioner uses this remedy prematurely, and with the intention of over-exciting nature, he will be completely foiled in his attempt; or if the slightest degree of spasmodic action is going on, the spasm will be increased by the medicine; or if given prematurely, there is a great liability to the excitement of spasm, either before or after the expulsion of the child.

SURGERY.

Spontaneous Cure of Hydrocele.—A man, aged 52 years, had been affected with hydrocele for many years. The tumour having been punctured, a quart of serum flowed out, and the testicles were found to be healthy. Nine months afterwards, the tumour had acquired the volume of a child's head. Dr. Krimer proposed to cure it radically by incision and extirpation of the tunica vaginalis, to which the patient consented. At the day appointed, Dr. Krimer and his colleagues having gone to the patient, were surprised at not finding the slightest trace of the hydrocele. The man said, that the evening before, having attempted to raise up a weight of 200lbs., he had felt a violent pain and a noise in the region of the inguinal ring. The pain continued most dreadful, as if the belly was being torn open. He then went to bed, passed much urine, and having fallen asleep after the pain became somewhat easier, the next morning there was no trace of the hydrocele to be found. An ecchymosis existed over the left side of the scrotum. The spermatic cord and epidydimis were varicose, the inguinal ring close, and there was not any trace of the liquor. He felt no pain. After a few days the ecchymosis and the varicose state of the cord disappeared under the use of fomentations. —*Medicinisches Conversations-Blatt*, 1831, No. xiv.

Medullary Sarcoma of the left Testis—Fatal from Disease in the Abdomen.—W. R., ætat. 20, admitted 30th May, 1826. Seven months previously he received a blow on the left testicle, which part soon became swollen, hard, and slightly painful; and for this affection he had been under treatment in the Edinburgh Infirmary for several weeks, but without being benefited by it. The swelling was nearly globular, and about the size of a small orange; it was smooth on the surface, had a solid feel, and was not painful, except when much handled. The cord was unaffected, but he had a sallow, unhealthy appearance. He complained of pain in the epigastric and left hypochondriac regions; and close to the umbilicus, on the same

side, and extending back towards the spine, a hard, ill-defined swelling was discovered, when he complained of tenderness on pressure.

A variety of local and constitutional remedies were employed, it being judged imprudent, from the suspicious state of the abdomen, to have recourse to castration. For the first three weeks, but little change took place; the testicle did not increase in size, or become more painful, but it became softer and more elastic. On the 26th of June, after a severe rigor, the tumour in the left side of the abdomen began to increase more rapidly, and he was unable to lie on the affected side, or tolerate pressure over it; his pulse was small and quick, and he had incessant thirst and troublesome vomiting. The pain gradually extended over the abdomen, and was increased by pressure; and the only ease he obtained, was when he lay on the right side, and relaxed the abdominal muscles, by retaining the trunk and thighs in a bent position. Notwithstanding the use of local and general bleeding, blistering, calomel, and opium, &c., the peritonitis did not diminish. He died on the 5th of July.

On inspection, the abdominal cavity contained a pound of sero-purulent fluid. The peritoneal coat of the stomach and intestines was extensively inflamed, and covered with patches of lymph. The liver was enlarged, softened, and had a mottled appearance. There was a tumour, nearly as large as a child's head, situated under the transverse arch of the colon, and covered by the small intestines. It lay close upon the spine, and was firmly attached to the aorta, vena cava, and left kidney. A section of the mass shewed it to be composed of a soft brownish-coloured substance, which resembled brain mixed with blood, and from the more solid parts a fluid like pus was squeezed out. The inferior part of the testicle presented the same appearance and structure as the abdominal tumour, but the upper half was firm, greyish-coloured, and slightly fibrous. The epididymis was enlarged, the tunica albuginea thickened, and adhering to the tunica vaginalis. The spermatic cord was sound.

The peculiarities of this case were, the apparent suspension of the malignant disease of the testicle, so soon as the tumour in the abdomen began to show itself; the absence of any morbid affection of the cord; and the occurrence of peritonitis, to which the death of the patient was more immediately to be referred. It seldom happens, even when the disease has extended to the abdomen, that the testicle remains stationary; on the contrary, it soon loses the globular shape and hardness which characterize its first stage, and becomes more and more enlarged, pyriform, and elastic; the scrotum is traversed by varicose veins; the surface of the gland becomes irregular, and adheres to the integuments, which frequently ulcerate and give exit to bloody serum and fungus. While these symptoms are in progress, and often before the testis is extensively affected, the cord becomes implicated, by which means the disease is propagated to the abdomen. This latter occurrence may, however, take place while the cord remains sound, a fact which it is of importance to recollect before cas-

tration is had recourse to, it being necessary, in such cases, not only to ascertain the freedom of the spermatic cord from the disease, but also to satisfy ourselves, by accurate examination, that there exists no internal affection which can militate against the success of an operation.

When the disease has extended to the abdomen, it may prove fatal by exciting peritonitis; but, more frequently, the attachments which the tumour forms to the different viscera, will so impede their functions, as to give rise to urgent symptoms, aggravate the general excitement, and accelerate the progress of the disease.—*Macfarlane's Hospital Reports.*

Medullary Sarcoma of the left Testis—Castration successful.—J. H., ætat. 32, admitted March 2nd, 1832. The left testicle was swollen, tense, pyriform, and hard, except at the anterior and upper part, where it had a soft elastic feel. It was nearly as large as the fist, and had a smooth surface; and the integuments covering it were of a dusky-red colour, but not adhering to it. The cord was not affected, but he complained of occasional pains in the abdomen and back, which were aggravated during the night, and sometimes deprived him of sleep. The tumour, when first observed after a severe strain, twelve months previous to his admission, was about the size of a pea, and attached to the lower part of the testis, which gradually increased, until the whole gland was involved. He was much emaciated, and had a sallow countenance; his pulse was ninety-six, and weak.

On the 3rd of March, I made an exploratory puncture into the anterior and upper part of the tumour, where there was an obscure fluctuation. Only a few drops of blood escaped; and in two days the wound was healed. He was ordered a pound of the decoction of sarsaparilla, with small doses of a solution of the murias hydrargyri daily; and an ointment, containing iodine and mercury, was rubbed on the tumour night and morning. This treatment was continued for three weeks, during which time the gums were slightly affected, but no improvement took place. On the 28th, it had to be given up, having produced diarrhœa, severe abdominal pains, and excoriation of the integuments of the scrotum. After this, his health began to decline still farther; his pulse became quick and irritable, and his appetite much impaired. The testicle continued to enlarge, the upper part of it being within an inch of the inguinal ring; the cord was slightly painful, and contained a small tumour about the size of a pea, but no disease could be detected in the abdomen. On the 17th of April, I removed the diseased testis, along with an elliptical portion of the integuments, and that part of the cord which contained the small tumour. The dissection of the gland was begun below, and carried upwards. The cord was separated from its connexions, and compressed between the fingers and thumb of an assistant; but it unfor-

tunately slipped, and became retracted to within the edge of the ring. Some difficulty was experienced in securing the spermatic artery, which was only accomplished after the incision was prolonged upwards, and a small part of the inguinal canal slit open: three sutures were introduced; the wound was covered with dry lint, over which a T bandage was applied. In two hours arterial hemorrhage occurred, but not more than two or three ounces of blood were lost. On removing the dressings and stitches, the ligature was found to have separated from the spermatic artery. Before it could be laid hold of, and again tied, the inguinal canal had to be slit open to the internal ring.

For three days he complained of acute pain in the left side of the abdomen, which was swollen and somewhat tense; the pulse was quick and sharp, and the bowels constipated. These symptoms were removed by leeches, fomentations, and purgatives, followed by a few doses of calomel and opium. The wound adhered, except that part in the groin which became irritable and sloughy. This was checked by the application of lunar caustic; his strength improved under the use of wine, quina, and nourishing diet; and he was dismissed, cured, on the 20th of May.

The testis, when examined, had the usual appearance and structure of medullary sarcoma, or fungus hæmatodes. It measured three inches in the transverse, and five inches in the longitudinal diameter, and weighed nearly fourteen ounces. A section of it exhibited a yellowish-white appearance, with here and there bloody patches from enlarged veins, and cysts containing a sero-sanguineous fluid. The inferior half was harder than the superior, where a cyst, about the size of a walnut, was situated. The soft brainy-like matter was deposited between the septa and the testis; and when squeezed out, it resembled pus tinged with blood. The denser portions of the gland seemed to contain a portion of coagulable lymph, both separate from, and mixed up with, the encephaloid structure peculiar to this disease. The posterior part of the testis was covered with a cluster of varicose veins; the epididymis was enlarged, and sunk into the substance of the swelling; the tunica albuginea was greatly thickened, and adhering to the tunica vaginalis. The cord had a healthy appearance, except where the small tumour was situated, which was composed of a soft, bloody mass, like coagulated blood.

The appearance of this patient, on admission, and the state of his disease, led me to believe that he was labouring under a strumous affection of the testis. The diagnosis is often obscure, and sometimes it cannot be satisfactorily established. I began to doubt the accuracy of my opinion when I observed the local and constitutional changes which took place during the progress of the treatment. It was evident, however, that the function of the gland was destroyed by the extensive morbid alteration which its structure had undergone; and whether this was of a simple or malignant character, its extirpation, in both cases, became equally necessary.

It is but rarely that castration is successful in removing this malignant affection; and that only when the disease is in an incipient state, and before it has involved the spermatic cord, or extended to the abdomen. Should the disease of the testis owe its origin to constitutional causes, the timeous removal of the gland, by operation, may still prove unsuccessful, although the abdomen be sound, and the cord unaffected; because there often exists a disposition to the formation of such tumours in other and distant parts of the body. In a case which I had an opportunity of seeing several years ago, the removal of the testis was followed, in less than two months, by the formation of a large tumour in the posterior mediastinum, and by a number of smaller ones on the surface of the lungs, all of which exhibited the structural peculiarities of this formidable and destructive disease.—*Ibid.*

Aneurism of the Arch of the Aorta mistaken for Aneurism of the Innominata, or of the Root of the right Carotid.—Mrs. C., aged fifty-eight, was admitted into the Infirmary on the 4th of February, 1826, on account of a fracture of the neck of the thigh-bone. She remained in the house for several months, and came under my care on the first of May following. On the 20th of that month, she first called my attention to a small pulsating tumour above the sternal end of the right clavicle, which she had observed four weeks before. It appeared suddenly, and was preceded by a peculiar sensation, as if something had given way at the part. It gradually came to project above the level of the sternum, following exactly the course of the right carotid for about two inches, and spread in a lateral direction across the front of the trachea, to the inner edge of the sterno-mastoid muscle of the left side. Its pulsations were strong, synchronous with those of the heart, and visible at a considerable distance. She had occasional attacks of dyspnœa and cough: the action of the heart was excited, and the pulse full and throbbing.

It was impossible in this case to point out the exact seat of the disease. By some it was supposed to be confined to the root of the right carotid; by others the arteria innominata was fixed upon as the affected vessel. There could be no doubt that the tumour was aneurismal; but no person, with any thing like accuracy, could point out the vessel to which it was confined. It seemed to dip under the sternum, and had more the appearance of an enlargement of the arteria innominata than of the carotid. In either case, the admirers of Brasdor's operation might have been inclined to have had recourse to it. The obscurity in the diagnosis, and the tolerably good health the patient enjoyed, made me averse to its performance.

She left the Infirmary about the middle of June, and I heard nothing more of her till I was requested to be present at the inspection of her body in the month of December following. She died of serous apoplexy; but, of course, the chief attention was directed to the state of the vessels at the root of the neck. On removing the lungs,

and proceeding to examine the aorta, and its chief branches, I was rather astonished to find that the arteria innominata, and the roots of the right carotid and subclavian, were of a natural size, and that the tumour which had existed during life was an aneurism of the arch of the aorta. The sac, which was of a pyriform shape, and filled with coagulated blood, passed obliquely across the arteria innominata, and ascended under the sterno-mastoid in the course of the right carotid. The roots of the carotid and subclavian appeared to be in some degree compressed by the tumour, but they were not obliterated.

It is hardly necessary to state, that had an operation been performed in this case, it would not only have been useless, but decidedly injurious. I am afraid we must expect to encounter many such disappointments, until we can establish a more accurate diagnosis. It is chiefly as a caution against the indiscriminate adoption of Brasdor's operation for aneurism at the root of the neck, that I have thought proper to narrate this case.—*Ibid.*

Encysted Tumour of the Abdominal Parietes—Puncture, followed by Peritonitis and Death.—A poor woman, about forty years of age, had the middle and inferior regions of the abdomen occupied by a smooth, firm, globular tumour, of great size. It had existed for two years before she applied to a surgeon; but she could not point out the situation in which she first observed it, nor give any satisfactory account of its progress. An obscure feeling of fluctuation existed in the centre, which projected in a somewhat conical form; and the integuments were so tense, and the boundaries of the tumour so ill defined, as to render it impossible to obtain a knowledge of its connexions. It was the frequent seat of acute pain; and, as it increased in size, it appeared, by its bulk and pressure, to impede the action of the bowels, and give rise to frequent attacks of colic.

Very dissimilar opinions as to the nature of this tumour were entertained by the various surgeons who examined it: all, however, agreed in thinking that it was within the cavity of the abdomen, and that it should be punctured. This was done with a trocar, and several pints of fluid, of the colour and consistence of mucilage, were evacuated. The wound was carefully closed, and a large compress and firm bandage applied.

Symptoms of peritonitis appeared a few hours after the operation, and, in spite of the most active treatment, proved fatal in five days. The intestines were found, on inspection, highly inflamed, and in several places, glued together by lymph. No tumour existed within the abdomen or pelvis, but it was found that the fluid had been contained in a large cyst, formed by the peritoneum internally, and by the abdominal muscles externally. The peritoneum was much thickened, and the inner surface of the cyst highly inflamed. Had the tumour been punctured at an earlier period, it is probable that

the fatal peritonitis would have been prevented. M. Lisfranc, in lately detailing to the Royal Academy of Medicine in Paris some cases of encysted tumours of the abdomen, recommends that they should be opened early, and injected with a stimulating fluid. This practice is not unattended with danger. I am acquainted with one case, besides others on record, in which fatal peritonitis was thus excited. If the encysted tumour, whether situated within the abdomen or exterior to it, is closely invested with the peritoneum, the inflammation, which it is the object of the stimulating injection to produce, is apt to extend to this membrane, and give rise to dangerous symptoms.

Abscesses often form in the iliac regions of the abdomen, enlarge slowly to a great size, and are sometimes mistaken for ovarian tumours. At times, the rapidity of their progress, and the acute, local, and constitutional symptoms by which they are accompanied, will clearly point out the nature of the disease. It is in chronic abscesses of the iliac fossa of the female that the diagnosis is so generally obscure.—*Ibid.*

Sarcomatous Tumour in the Abdominal Muscles.—W. T., æt. twenty-two, 25th September, 1831. There was situated in the right iliac region, nearer to the spinal column than the umbilicus, a smooth ovoid tumour, about the size of the fist, which had a hard cartilaginous feel, admitted of hardly any motion, and was apparently attached to the floating end of the twelfth rib. It projected nearly an inch beyond the level of the abdominal integuments, and was distant six-and-a-half inches from the umbilicus, four inches from the spinous process of the vertebræ, and four from the anterior superior spinous process of the ilium. The fingers could be partially insinuated under its anterior margin, which was slightly irregular, and from which firm bands were felt passing in various directions.

When the tumour was first observed, two years ago, its origin being attributed to severe exertion, it was about the size of a field bean. It gradually increased, and became so painful as often to prevent sleep,—the pain being not only situated in the tumour, but also extending across the abdomen, and along the right thigh.

At a consultation, on the 28th, the majority of my colleagues were of opinion, that on account of the difficulty of ascertaining the parts to which the tumour was fixed, and the risk of the abdomen being laid open, no operation should be had recourse to. For reasons which I shall afterwards state I dissented from this decision, and thought that an operation, although likely to be difficult in its performance, was perfectly safe and practicable. I had no faith in the use of external applications, but, as I wished to retain the patient in the Infirmary, I ordered the tumour to be rubbed night and morning with a combination of mercurial ointment with camphor, and to be repeatedly leeched. In a few days, the mouth was decidedly affected; and on the 6th of October, the mercurial frictions were discontinued. The only change which these applications produced, seemed to consist

in a slightly increased mobility in the lower half of the tumour, the upper half over the rib remaining as firm and as immoveable as formerly.

On the 15th of October, it was agreed, at a second consultation, that the tumour should be extirpated. To this opinion one of the gentlemen objected, by stating his conviction, that the tumour was covered by all the abdominal muscles, and was attached to, and incorporated with, one of the ribs. Had I been satisfied of the correctness of this opinion, I should certainly have declined the operation, unless the patient continued anxious for its performance, after its difficulties and dangers had been fairly stated to him, especially as the disease, although productive of considerable pain and inconvenience, had not in the slightest degree impaired his health; but, as my opinion was decidedly different, I did not hesitate to recommend it.

On the following day (the 16th), the tumour was extirpated, with great ease. On making an elliptical incision, eight inches in length, and dissecting off the investing integuments, the tumour was still covered by a layer of muscular substance, which was found to be the external oblique. When this was divided, the tumour came into view, and was found resting on, but not attached to, the ribs. It was easily separated from its posterior attachments by the finger, and made to start from its deep position by pressure. It was about the size of a lemon, had a greyish colour, not unlike half-bleached wax; was in some parts semi-transparent, and exhibited a smooth, compact texture, its centre being fibrous. It was covered by a firm membrane; and was found, when analyzed, to be chiefly composed of albumen.

Three arteries were tied, and the edges of the wound retained in apposition by sutures, &c. For three or four days there was considerable febrile excitement, with pain in the wound, increased on motion and coughing, and with flatulent distention of the abdomen, but without pain or tenderness on pressure. For these symptoms purgatives were effectually employed. The wound healed rapidly; and he was dismissed on the 15th of November.

In this case there was no difficulty in ascertaining that the tumour was confined to the parieties of the abdomen. It was less easy, however, to say whether it was covered only by one or by all of the abdominal muscles. At first sight, the partial mobility of the tumour, and its apparent fixture to the inferior rib, where it seemed to pass more deeply, led to the belief that it was situated between the abdominal muscles and the peritoneum. On more minute examination, however, I was satisfied that it was only covered by a thin layer of muscle, and that what appeared to be fibrous bands, passing from its anterior margin, were only portions of the external oblique, raised and put on the stretch by the size of the tumour. At this part the fingers could be pushed under the edge of the tumour; and it could be moved a little, and slightly raised, circumstances which could hardly have been expected in so robust and muscular a subject as this patient was, had all the abdominal muscles covered it. It is quite possible,

however, to grasp and elevate a tumour, although covered by all the muscles forming the abdominal parietes, in individuals of relaxed fibre, such as women advanced in years, or who have borne several children. The appearance which the tumour had of being more superficially seated anteriorly than posteriorly, was evidently deceptive, as it could hardly be supposed to be covered with more layers of muscle in one place than in another. On the contrary, it was more reasonable to expect that it was entirely confined to, and continued to grow between, the muscular planes in which it was originally developed.—*Ibid.*

END OF VOLUME II.

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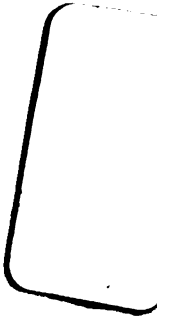

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